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YEAR BOOK OF THE COMMONWEALTH.

COMMONWEALTH BUREAU OF CENSUS AND STATISTICS,
MELBOURNE.

OFFICIAL
YEAR BOOK
OF THE
COMMONWEALTH OF AUSTRALIA,

CONTAINING AUTHORITATIVE STATISTICS FOR THE PERIOD

1901-1907

AND CORRECTED STATISTICS FOR THE PERIOD 1788 TO 1900.

No. 1.—1908.

PUBLISHED UNDER THE AUTHORITY OF THE MINISTER OF HOME AFFAIRS,
BY
G. H. KNIBBS,
FELLOW OF THE ROYAL STATISTICAL SOCIETY, ETC., ETC.
COMMONWEALTH STATISTICIAN.

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PREFACE.

By the Constitution of the Commonwealth of Australia, the Commonwealth is empowered "to make laws for the peace, order, and good government of the Commonwealth, with respect to," *inter alia*, "Census and Statistics." In exercising the power so conferred, a "Census and Statistics Act" was passed in 1905, and in the year following the "Commonwealth Bureau of Census and Statistics" was created. The publication here presented is therefore the first authoritative Year Book issued under the Federal Constitution.

In addition to Statistics for the whole of the Federal period, 1901 to 1907, this Year Book also furnishes corrected statistics for the period 1788 to 1900. This was necessary to constitute this publication the authoritative source of statistical information for the Commonwealth of Australia for the whole Federal period, and to shew the proper relation of that information to the past statistical history of Australia.

The general arrangement of the publication, differing somewhat from that of previous Year Books, is shewn in the synopsis on pp. v. to xvi. immediately following, and will be substantially adhered to in the future issues.

In addition, however, to what may be called purely statistical matter, each issue will contain articles dealing at length with some particular subject or subjects of more or less permanent interest. It is undesirable as well as impracticable to repeat these year after year, seeing that it would unduly increase the size of the publication. As a rule, therefore, only a brief condensation of special articles will appear in subsequent issues of the Year Book, or they may be omitted altogether.

The general statistical matter will, of course, be brought up to date from year to year, and, except in cases intended to specially illustrate or elaborate some question of peculiar importance, will be set forth on each occasion with equal fulness. In this way each Year Book will, by reason of its special features, have some measure of independent interest.

Through the co-operation of the various State Bureaux with the Commonwealth Bureau it has been possible to considerably advance the accuracy, and in general the intrinsic value, of Australian Statistics. The collection of data is also being continually improved.

It has been found desirable to deal with the subject matter from a threefold aspect, viz.:—

(i.) The development of the component States.
(ii.) The progress of Australia as a whole from the earliest times.
(iii.) The statistical comparison of Australia with other leading countries of the world.

In the endeavour to supply reliable details of this character, considerable difficulties have been experienced, more particularly as regards the early years of Australian colonisation, and although assistance has been cordially rendered not only by the State Statistical Bureaux, but also by other State Departments that were in a position to help, the results obtained must in many cases be considered as roughly approximate only.

A feature of this publication is the use made of maps and diagrams. The changing boundaries of the various States, the distribution of the population of Australia, of its rainfall, etc., the development of its railway system, and similar facts can be properly appreciated only by the use of maps. In like manner the progress of events, the characteristics of growth and decline, can in general be represented much better graphically than numerically. The diagram or "graph" is a direct picture in which the relative magnitudes are preserved and by which instantaneous comparisons are made possible.

The graph has also the advantage of shewing current events in relation to the past, from which often they derive their significance, and comparisons of the graphs of interdependent facts often throw light on the nature of the interdependence.

The development of Australia has been in many instances very remarkable, and this could be shewn only by graphs dating back to its beginning in 1788. In most cases accurate data are not available for years much before 1860. In such cases, therefore, it seemed sufficient at present to give continuous results from that year onwards.

The great mass of material embodied in this Year Book has been carefully examined, but to hope that all error has been avoided would be idle. If readers will kindly point out any errors or limitations which they may discover, the Commonwealth Statistician will much appreciate the opportunity thus afforded of perfecting the matter and arrangement of the Year Book.

In conclusion, the Commonwealth Statistician desires to express his cordial thanks to the State Statisticians, and to the responsible officers of the various Commonwealth and State Departments, who have so kindly supplied all desired information.

G. H. KNIBBS,
Commonwealth Statistician.

COMMONWEALTH BUREAU OF CENSUS AND STATISTICS.
31*st March*, 1908.

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In the first official YEAR BOOK OF THE COMMONWEALTH OF AUSTRALIA, the corrections shewn hereunder are found to be necessary.

G. H. KNIBBS,
Commonwealth Statistician.

COMMONWEALTH BUREAU OF CENSUS AND STATISTICS,
MELBOURNE, *20th May*, 1908.

CORRIGENDA.

Page v, for "Chapter II." read "Section II."
,, 3, line 6, for "February, 1891," read "March, 1890."
,, 3, line 7, for "315" read "186."
,, 39, line 43, for "Bachelor" read "Batchelor."
,, 39, line 50, for "Houston" read "Houstoun."
,, 56, in central map, Western boundary of Queensland should be Eastern boundary of South Australia prolonged. Area Northern Territory, 710,040 sq. m.; area Queensland, 554,300 sq. m. The text on p. 53 requires corresponding alteration.
,, 45, line 44, for "Java la Grande" read "Jave la Grande."
,, 119, ,, 27, for "4°" read "40°."
,, 120, ,, 9 from bottom, omit "extreme," and after "North-east" insert the words "of the Southern Goldfields."
,, 120, line 10, for "with" read "without."
,, 123, ,, 1, for "(v.)" read "7."
,, 127, ,, 19 from bottom, for "Whin Creek" read "Whim Creek."
,, 135, under *Ottawa* in 3rd column from right, for "31.6" read "—31.6."
,, 168, last line in last column on right, for "37,37,801" read "3,773,801."
,, 201, the rates are per 1000 of population.
,, 204, line 8 from bottom, for "1000 deaths" read "population of 1000 as constituted."
,, 205, in heading of table read "Tabulation" for "Compilation."
,, 215, line 2, for "of the" read "for the."
,, 235, line 8, after "grazing allotments" add "For existing conditions as to improvements see Acts No. 1749 and 1957."
,, 235, line 12, for "fourpence" read "threepence."
,, 241, line 2, add "The provisions relating to homestead associations were repealed in 1904."
,, 246, last line, for "Agricultural Lands Purchase 1894, as amended in 1897, 1901, and 1905," read "Closer Settlement Act 1906."
,, 253, for "10. Closer Settlement" read "11. Closer Settlement."
,, 270, for "1. Classification" etc., read "11. Classification" etc.
,, 294, for "§ 5. Graphical Representation" read "§ 6. Graphical Representation."
,, 312, in table of "Interstate Trade in Maize" read "Centals" for "Bushels."
,, 315, in table of "Interstate Trade in Barley, etc.," read "Centals" for "Bushels."
,, 343, in table under "Total Advanced," line Commonwealth, for £4,172,704 read £4,172,714; for £5,377,307 read £4,577,307.

Page 354, line 13, omit "Tasmania excepted," and below line 20, insert "Tasmania . . . Manure Adulteration Acts 1893 and 1898."
„ 410, line 13, for "3666 tons" read "103,666 tons."
„ 424, for "6. Production" etc., read "4. Production" etc.
„ 424, for "7. Export" etc., read "5. Export," etc.
„ 425, for "8. Price" etc., read "6. Price" etc.
„ 426, for "9. Price" etc., read "7. Price" etc.
„ 426, for "10. Employment" etc., read "8. Employment," etc.
„ 453, missing figures in first table for South Australia may be found on p. 382.
„ 499, under *Straits Settlements* in column 4, for "253,607" read "269,013."
„ „ „ *Total British Possessions* in column 4, for "6,735,864" read "6,751,270."
„ „ „ *Total British Countries* in column 4, for "33,311,697" read "33,327,103."
„ „ „ *Total Imports from all Countries* in column 4, for "44,729,506" read "44,744,912."
„ „ under *Other Foreign Countries* in column 8, for "1,641,935" read "1,657,341."
„ „ „ *Total Foreign Countries* in column 8, for "15,355,753" read "15,371,159."
„ „ „ *Total Imports from all Countries* in column 8, for "44,729,506" read "44,744,912."
„ 552, line 21, for "§ 14. *infra*" read "§ 15. *infra*."
„ 561, line 31, for "Light Railway" read "Main Line Railway."
„ 561, line 44, for "Devonport" read "Formby," and for "Formby" read "St. Marys."
„ 566, line 7, under *South Australia*, for "87¼" read "47¼."
„ „ „ „ „ *Commonwealth*, for "732¼" read "692¼."
„ 569, under 17. Cost of Construction etc., for "£135,448,923" read "£137,936,168."
„ „ „ „ „ „ „ „ for "£9754" read "£9669."
„ 607, line 4 from bottom, in last column on right, for "747,116" read "77,116."
„ „ last line, in last column on right, for "2,839,356" read "2,169,356."
„ 626, heading of table, for "1907" read "1906."
„ 712, table "Ordinary Life Assurance," the figures are as given on the official statistics; they are not, however, compiled for each company on uniform lines.
„ 719, line 10, for "at" read "of."
„ 798, in heading of table, for "Electors Enrolled" read "Electors Enrolled in Contested Districts" for House of Representatives.

OFFICIAL STATISTICS.

COMMONWEALTH OF AUSTRALIA YEAR BOOK, 1901 to 1907,

With Corrected Statistics for Earlier Years.

SECTION I.

INTRODUCTION.

§ I. Development of State Statistics.

1. **Origin of Statistics in Australia.**—The earliest form of Government in each State of Australia was that of a "Crown Colony," in which the Governor, usually advised by a local Legislative Council, initially wholly nominee, but ordinarily partly nominee and partly elective, administered public affairs under direct instructions from the "Colonial Office" in London. For the information of this Office somewhat comprehensive annual returns were required. These were furnished in triplicate, on forms supplied by the Colonial Office itself, one being returned to that Office, a second being retained by the Governor, and the third remaining with the department responsible for the preparation of the return itself, or else with the Legislative Council referred to.

These returns, known as "Blue Books," were the forerunners of the present "Statistical Registers" of the Australian States, and it is in the work of preparing them that we find the germ of development of Statistics in Australia.

2. **Conditions of the Development of Statistics.**—As in almost every other country in the world,[1] the general situation did not primarily lend itself to the creation of a system having any pretension to uniformity. The limitations, from the standpoint of statistical technique, of the early records, arose from several causes. Not only was there no adequate machinery for the collection of data, and no professional control of the form of inquiry, but even the inquiries themselves were based upon a view directed rather to immediate administrative requirements, than to those arising from the developments likely to occur in the future. Again, the conditions of life in Australia were *toto cœlo* different from those known to the officials who determined the form and extent of the statistical returns. While, therefore, one condition of a satisfactory statistic existed, viz., uniformity of statistical data, the other two did not exist, at any rate in their absolute integrity, viz.:—

(i.) Uniformity of interpretation of the requirements, and
(ii.) Uniform machinery for the collection of the desired particulars.

Again, no attempt was made to prepare, from time to time, a statistical survey of the affairs of this country as a whole. The "Blue Books" appear to have been regarded rather as documents for the guidance of the administrators in the Colonial Office than as contributions to a scheme of international statistic. Much the same view existed elsewhere.[2] And it is also to be remembered that, even as late as 1855, when the Crown

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[1] See "Geschichte, Theorie, und Technik der Statistik," August Meitzen.—Prof. d. Staatswissenschaft, Univ., Berlin, 1891.

[2] In Austria and Russia, for example, in earlier days. "Il était ordonné que ce travail ne serait communiqué qu'aux personnes qui en avaient le droit pour les besoins des Services publics," writes Bertillon in reference to the statistical service created on 6th April, 1829, in Austria. Vide "Statistique Administrative," par Dr. J. Bertillon, 1895, p. 17.

Colony system was first varied by granting responsible government to the Colonies of New South Wales, Victoria, and Tasmania, the total population of what is now the Commonwealth of Australia was only about 800,000, and that the administrative facilities did not lend themselves to that perfecting of statistical information which might be expected of older countries.

3. **The Granting of Responsible Government and its Effect.**—During the decade 1851-1860 responsible government was granted to each State, Western Australia excepted, the actual years being:—

New South Wales, Victoria, and Tasmania, 1855; South Australia, 1856; Queensland, as part of New South Wales, 1855; as an independent colony, 1859. Western Australia remained a Crown Colony till 1890.

With the advent of such government the "Blue Book" requirement of the Colonial Office necessarily ceased, the duty of compiling statistical information devolving, of course, on the local Governments. This tended to individualise it. Statistical information, whether for the "Blue Book" or for its successor, the "Statistical Register," was ordinarily prepared by an officer without special training in the technique of statistic, as a well-organised and scientifically elaborated method of recording and analysing the facts. There is reason to believe that not infrequently the returns were regarded as an unnecessary and troublesome incubus, hindering the discharge of ordinary duty. Thus the new "Statistical Register" was substantially the old "Blue Book," 'writ large.'

4. **Administrative Control of Statistical Compilation.**—The work of statistical publication devolved upon the departments dealing with Internal or Home Affairs, the Ministerial head of which was variously known as the Colonial Secretary or Chief Secretary, but the actual collecting and compiling was usually carried out by the various administrative departments directly concerned, as, for example, "Finance" by the Treasuries, "Trade" by the Customs Departments, etc. The drift into divergence of method, as between State and State, was inevitable.

5. **The Registrars-General and their Statistical Functions.**—The work of compiling the statistics of the several colonies was early relegated to the Registrars-General of Births, Marriages, and Deaths. In four out of the six States the officer who administers the Registration Act is now also Government Statistician, although the statistical staff in each State is practically distinct from the registration staff. A more particular account of the development is given under the heading of each State.

§ 2. The Statistical Bureaux of the Several States.

1. **New South Wales.**—On the separation of the Port Phillip District in 1851, the "Statistical Returns" of "New South Wales proper, only" were ordered by the Legislative Council to be printed on 28th July, 1852. They are a mere grouping of a number of independent returns, 1837 to 1851, according to the title, though in some instances the data go back to 1832.

In 1858 the Registrar-General of the State (Mr. C. Rolleston, afterwards C.M.G.) formulated a better scheme, and in "presenting . . . the new 'Statistical Register' . . . for the year 1858" made an important announcement regarding its scope and significance. He gave also, in tabular form, a statistical view of the progress of the State from 1821 to 1858. The report, dated 29th August, 1858, may be taken as the initiation, under the Registrar-General, of a formal organisation of official statistical compilation in New South Wales.

After the separation of Queensland, in 1859, the statistical information began to be given in somewhat greater fulness. A statistical register appeared each year, and separately a record of Vital Statistics.

In July, 1886, a Statistical Bureau was created and placed in charge of Mr. T. A. Coghlan, now I.S.O., F.S.S., etc., and Agent-General of New South Wales, the "Register" for that year being the first compiled in the Statistician's office.

Considerable improvements in the field of statistics were immediately effected by Mr. Coghlan, and an annual with the title "The Wealth and Progress of New South Wales" was published at the end of the following year, in order to shew the progress and potentialities of the State as disclosed by the statistical record. General statistics were much elaborated under Mr. Coghlan's régime, and special attention was given to the record of progress in primary and manufacturing industries.

Mr. Coghlan's advent in the field of statistic led to a decided forward movement. In February, 1891, he issued a brief account, largely statistical, of Australasian affairs. Initially, this was a small octavo volume of 315 pp., with the title "The Seven Colonies of Australasia," and it attempted, with no small degree of success, the difficult task of enabling a comparative study to be made of the affairs of the different States of Australasia. Occasionally, also, it made comparisons with the data of foreign countries. These comparisons, however, were often limited by the want of a central agency with the necessary authority to bring about a real unification of statistical effort. In 1904 the title of the publication was changed to "Australia and New Zealand," that particular volume referring mainly to 1902-3, though occasionally also only to 1901.

Marked improvements were made in the Vital Statistics for 1894, the volume being published in 1896.

After Mr. Coghlan's departure in the early part of 1905, the Statistics of New South Wales were dealt with by Mr. W. H. Hall, F.S.S., as "Acting Government Statistician," till they were taken up in 1906 by the present "Director," H. C. L. Anderson, M.A., Univ. Syd. Mr. Hall, in 1906, published the "Official Year-Book of New South Wales" for 1904-5, departing considerably from the form of the previous publications.

2. **Victoria.**—The first Statistical Register of Victoria appears to have been issued by the Colonial Secretary, Captain W. Lonsdale, in November, 1851, but it was not till 21st September, 1854, when Mr. William Henry Archer, F.I.A., etc., Assistant Registrar of Victoria, issued his "humble attempt to commence a series of Registers . . . that may . . . faithfully reflect the progress of this extraordinary colony," that statistical compilation was in any adequate sense organised. The Register was a small octavo volume of 447 pp. The following year this "Statistical Register of Victoria" was increased to foolscap size, under the title "Statistics of the Colony of Victoria," and was published annually by the Registrar-General till 1873 (the 1872 issue). A Statistical Bureau was created in that year, and the late Henry Heylyn Hayter, C.M.G., Hon. Mem. S.S. Lond., etc., appointed "Government Statist," a position which he filled till his death on 23rd March, 1895.

Till 1873 the statistical publications in Victoria consisted of the yearly Register and occasional pamphlets known as "Progress and Statistics," "Notes of Progress," "Facts and Figures, Statistical and General," "Progress of Victoria,"[1] etc., but Mr. Hayter commenced at once the "Victorian Year Book," a modest volume of 114 pp., first issued in 1874, and which in 1887 was no less than 931 pp. On Mr. Hayter's death the office was, for a short time, filled by Mr. E. F. Owen, as Acting Government Statist, and by Messrs. J. J. Fenton and William McLean until the appointment of the present Statist, Mr. E. T. Drake, in January, 1906.

The regular statistical publications of Victoria now consist of the "Year Book," the "Statistical Register," and the "Quarterly Abstract." It is to Mr. Hayter's Year Book, which was continually being improved, and to his wide acquaintance with foreign statistics, that the development of Australian Statistic is largely due. That Mr. Hayter's work was widely honoured is manifest in the honorary memberships bestowed upon him by foreign societies.

3. **Queensland.**—Before the establishment of Queensland as a separate colony in 1859, the local statistical data were collected and published as part of the statistics of New South Wales. The official statistics were compiled by the Registrar-General, Mr. F. O. Darvall, with the assistance of Rev. R. Creyke, the first being for 1859-1860, about 50 pp. In 1866 a special "Statistical Clerk" was appointed (Mr. J. C. Whitley), and the size of the Register increased to 160 pp. In 1874 the title of the office was changed to "Compiler of General Statistics," a title retained till the appointment of the present "Government Statistician," Mr. Thornhill Weedon, F.S.S.

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[1] See, for example, "The Progress of Victoria, a Statistical Essay," by William Henry Archer, Reg.-Gen. Vict., 1873, pp. 159.

The Statistical Register of Queensland bears the title "Statistics of the Colony (now "State") of Queensland." Year Books for 1896 and 1897 were published, in 1897 and 1898 respectively, by Mr. Thornhill Weedon, as "Compiler of General Statistics," under the title "Queensland Past and Present." They were essentially "epitomes of its resources and development." In 1901 a "Queensland Official Year Book" was issued, but has not since appeared. In 1905 and 1906 Mr. Weedon issued pamphlets of 36 and 44 pp., bearing the title "The A.B.C. of Queensland Statistics." They are of the nature of comparative tabulations, and shew the affairs of Queensland in relation to Australia generally.

4. **South Australia.**—The first statistical publication of South Australia, compiled from "authentic official records," appeared in 1854. It was published by Mr. O. K. Richardson, Acting Colonial Secretary. Under the title "Statistics of South Australia," annual records appeared for 1856 to 1858. In 1860, in response to the request of the Governor, the first number (1859) of the "Statistical Register" appeared. This, according to Mr. J. Boothby, then "Chief and Record Clerk" and afterwards "Government Statist," was "a preliminary step . . . taken toward that 'unity of system' acknowledged . . . to be of essential importance." The "Statistical Register," up to the 1875 issue, came from the "Chief Secretary's Office," but from 1876 onwards from the "Office of the Government Statist," which, however, is a part of the former. Mr. J. Boothby was "Government Statist" from 1863 till 1879; Mr. G. S. Wright was Acting from 1879 to 1882; Mr. H. J. Andrews was "Government Statist" from 1882 to 1889; and L. H. Sholl, I.S.O., has filled the position since, viz., from 8th May, 1890. Steps are now being taken to improve the organisation of the Statistical Bureau.

Two general official presentments of the affairs of South Australia have been made, viz.:—"South Australia, its History, Resources, and Productions," by W. Harcus, J.P., 1876, pp. 311; and "The Province of South Australia," by J. D. Woods, J.P., "with a Sketch of the Northern Territory by H. D. Wilson," 1894, pp. 446.

5. **Western Australia.**—The first manuscript "Blue Book" of Western Australia dates back to 1837, but no compilation of statistical data appears to have been printed till 1870. In 1882 Sir William C. F. Robinson, Governor, caused an "Abstract of Statistical Tables" for 1872-1881 to be prepared. This was followed by a "Statistical Return" for 1883, published in 1884, by Sir Malcolm Fraser, Colonial Secretary, a publication continued till 1886. A Report commenting on the "Blue Book" was issued, first in 1885, as a parliamentary paper, and continued till 1889, when it was included in the new "Year Book.".

In 1884 The Rt. Hon. Sir John Forrest, P.C., G.C.M.G., LL.D., etc., then Commissioner of Crown Lands and Surveyor-General, issued a small pamphlet with the title "Notes on Western Australia, with Statistics for 1883", the precursor of the Western Australian Year Book. The first number of this publication, viz., for 1886, appeared in 1887. It was issued by the late Mr. G. C. Knight, Registrar-General; the 1889 issue was by Mr. W. A. Gale, Acting Registrar-General, and that for 1890 was by the present Government Statistician, Mr. Malcolm A. C. Fraser, F.S.S., etc. As first issued the Year Book contained 127 pp.; in 1904 it was 1283 pp.

The "Blue Book," which up to 1890 was issued from the Colonial Secretary's Office, was in that year transferred to the Registrar-General. On the 1st July, 1897, a Statistical Bureau was created as a branch of the Registrar-General's Department; the "Blue Book" was then superseded by the "Statistical Register." It was not till July, 1901, that the title "Government Statistician" was added to that of Registrar-General, the officer who now directs the statistical office, through, however, a distinctly organised statistical bureau. Its present publications are:—

1. Statistical Register of Western Australia.
2. Western Australian Official Year Book.
3. Monthly Statistical Abstract.
4. Quarterly Returns of Population and Vital Statistics.
5. Preliminary Crop and Live-Stock Returns.
6. Estimates of the Areas of Wheat, etc.
7. Breadstuff Statistics.

6. **Tasmania.**—Statistical Records were kept in Tasmania from as early as 1804, but those from that year to 1823 do not appear to have been published till 1856. The "Statistical Returns of Van Diemen's Land," from 1824 to 1839, were published as early as 1839 by John Montagu, and afterwards, ordinarily, biennially by the Colonial Secretary till 1853. In 1855 the register was known as the "Statistics of Tasmania" for the first time, and was compiled in the Private Secretary's Office and published by order of the Governor.

It was not, however, till 1st July, 1882, that a properly-constituted Statistical Bureau was established; this was the date of the appointment of the present "Government Statistician," R. M. Johnston, I.S.O., F.S.S., etc., who was also made Registrar-General of Births, Deaths, and Marriages. In 1882 Mr. Johnston published the "Statistics of the Colony of Tasmania" for 1881, with a Statistical Summary from 1816-1881. This Register has been continued since under the same title. The "Tasmanian Official Record" was issued for 1890 and 1891, and its title changed to "Handbook of Tasmania" in 1893. It has not been issued since.

7. **New Zealand.**—Although New Zealand is not a part of the Commonwealth of Australia, its affairs will be treated of to some extent in this publication.

Prior to 1858 statistical compilation in New Zealand was limited to particular parts of the territory, or to particular periods, but from 1858 to 1889 the annual statistical volume, then the only official statistical publication issued, attempted to embody a comprehensive and authoritative compilation of all statistical facts. This was compiled by the Registrar-General. In 1890 a "Report on the Statistics of New Zealand" was also published, which became, in 1892, the "New Zealand Official Handbook." The title of this was changed in the year following to the "New Zealand Official Year Book," a title still retained. The publications now issued are:—

(i.) Statistics of New Zealand, and (ii.) New Zealand Official Year Book;
(iii.) Fifty Years' Progress in New Zealand—all these are annual.
(iv.) Municipal Handbook of New Zealand; Census Reports, etc.

The present Registrar-General, Mr. E. J. von Dadelszen, has a properly-organised statistical bureau in his department, one branch of his work being purely registrational, the other statistical.

§ 3. Co-ordination of Statistical Effort.

1. **Early Recognition of Need for Uniformity.**—As far back as 1854, William Henry Archer, then Assistant Registrar of Victoria, recognised the necessity for "the foundation of a broad statistical system."[1] He had in mind the work of "such eminent Statists as Farr, Neison, Porter, Quételet, Dupin, Villermé, Hoffmann, Schubert, and Ramon de la Sagra." The State Governor (La Trobe) took a warm interest in the work of making Victorian Statistic worthy of the then state of development of the Science. Mr. Archer's influence affected the other colonies of Australia. In July, 1859, the Governor of South Australia proposed that there should be "not only unity in point of time, but also as regards system in the compilation" of the facts.[2] A hope was expressed that the three colonies should unite "not only in regard to the enumeration of the people, but to re-cast and assimilate, in concert, all 'Blue Book' and other statistics, on a scientific and practical basis;" and South Australia was invited by New South Wales to "join in such measures as may be calculated to secure uniformity in statistics of such importance."[3]

2. **Individualistic Tendencies of States.**—Notwithstanding this early recognition that the Statistics of Australia should be developed on a uniform plan, the autonomy of each State led to divergencies of domestic policy and practice. These divergencies tended also to manifest themselves in the statistical technique, as well as in the facts collated. Even where there seemed to be unity of action, or identity in the data to be collected,

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[1] See Preface to the first Statistical Register, Vict., 1854, p. ii.

[2] Report by Mr. J. Boothby, p. iii. Statistical Register, S. Austr., 1859.

Ibid.

the unity and identity were often more apparent than real. The comparative studies made by each Statistician revealed with more and more clearness, in proportion as they were thorough, the grave lack of uniformity in the statistical data and methods of the several States, however excellent these may have been considered alone.

3. **Conferences of Statisticians.**—Besides much interchange of idea, and many informal conferences on various branches of statistic, there were six professional conferences of the State Statisticians, for the purposes of reaching greater uniformity, as the list hereunder will show. These were followed by the Conference of November and December, 1906, presided over by the Commonwealth Statistician.

STATISTICAL CONFERENCES.

Date of Conference.	Place of Meeting.	Colonies or States represented.	Object of Conference.
October, 1861 ...	Melbourne	New South Wales, Queensland, South Australia, Victoria.	To secure uniformity in the collection and compilation of statistics.
January, 1875 ...	Hobart ...	New South Wales, South Australia, Tasmania, Victoria.	To secure uniformity in the collection and compilation of statistics.
March, 1890 ...	Hobart ...	New South Wales, South Australia, Tasmania, Victoria, New Zealand.	To secure uniformity in the collection and compilation of Census returns.
February, 1900	Sydney ...	New South Wales, Queensland, South Australia, Tasmania, Victoria, Western Australia, New Zealand.	To found a uniform basis for the estimation of population and to secure the collection and compilation of Census on uniform principles.
January, 1902 ...	Hobart ...	New South Wales, Queensland, South Australia, Tasmania, Victoria, Western Australia, New Zealand.	To secure uniformity in the preparation of statistical returns.
September, 1903	Melbourne	New South Wales, Queensland, South Australia, Tasmania, Victoria, Western Australia.	To secure uniform methods in the statistics of population.
Nov., Dec., 1906	**Melbourne**	**Commonwealth, and each State therein and New Zealand.**	**Co-ordination of the entire statistical effort of the Commonwealth and State Bureaux.**

4. **Results of Statistical Conferences.**—The main result of the various State conferences was to maintain a certain degree of *rapport* between the State Statisticians, rather than to bring about any very fundamental advance in statistical method. Agreement was reached as to the ground to be covered by a form known as "Australasian Statistics," which gave to each State of the Commonwealth and to New Zealand the necessary knowledge of the affairs of every other part of Australasia. The conferences also secured a considerable degree of unity of method in connection with the various Censuses. But, as was said by the Commonwealth Statistician in his address to the State Statisticians in the Conference last above-mentioned, although the fundamental object in each instance "was to secure unity of statistical method," there was "still much to be achieved."[1] "The adoption of a sufficiently comprehensive set of statistical forms throughout Australia" would, it was said, "remove much of, if not all, the limitation that exists through diversity of method in the collection of statistical material," and though it would not "necessarily achieve a uniform degree of accuracy, it must, at least, tend toward the attainment thereof."

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1. Report of Conference of Statisticians, 1906, p. 17, § 13.

§ 4. Uniformity in Statistic an Imperative Necessity.

1. **Uniformity an Essential.**—"Without uniformity there is no safety in Statistic,"[1] says Dr. Bertillon in his discussion on the "absolute necessity for uniformity in Statistics." In order to combine data, each term or category under which facts are enumerated must have an identical meaning for each region. The necessities of a good statistical organisation for any territory, large or small, are as follows:—

(i.) Identity of categories under which facts are to be collated.
(ii.) Substantial identity in method of collection.
(iii.) Uniformity in the scheme of presentation.
(iv.) As far as possible simultaneous collection of the facts in the different parts of the territory.

These desiderata are obvious, and though, academically, it is equally obvious that comparisons are valueless unless the data compared are of the same type, it by no means infrequently happens that aggregates are formed from, or comparisons are made with, dissimilar data. For example, unless two populations are similarly constituted as to sex and age, their birth and marriage rates are not immediately comparable; the relative sobriety of two peoples cannot be immediately determined from the police court records of drunkenness, where there are fundamental differences in the magisterial policy of dealing with offenders; failure of crops through drought cannot be compared where one territory enters all such instances as cases of lands lying fallow, and so on.

2. **Uniformity Demanded by Commonwealth Administration.**—In so far as Commonwealth administration is dependent upon a survey of the affairs of Australia, so is it urgent that the statistical compilation should be uniform in character. The well-being of the Commonwealth implies the well-being of its integral parts, viz., the several States therein, hence a federal purview of the development of those parts should not only be absolutely impartial, but also well founded. It is directly concerned with the good of the whole as well as that of the individual States. Thus the Commonwealth is materially interested in the whole of the available statistical data for each State, and must necessarily regard statistical uniformity as indispensable. Australia, with Tasmania, a territory of such dimensions that by far the greater part of Europe would lie within its boundaries, possessing, moreover, a range of latitude such that its climate, and consequently its productions, exhibit the most striking differences, possessing also diversified physical features and general characteristics, cannot, when examining its development, be regarded as a homogeneous unit. This makes uniformity of statistical method more than ordinarily important, and it is evident that a complete statistical record of the growth and condition of its population, and of all the features of the industrial, agricultural, and commercial effort, is essential for that critical review of its development and tendencies, without which it would be practically impossible for the Commonwealth Government to be adequately and accurately advised in connection with its administrative and legislative functions. Without a well-ordered record it could not well guard the destinies of Australia, or properly protect her interests.

Again, the development of any one part of the Commonwealth has either immediate reactions upon, or remotely affects all other parts, both in various ways and in differing degrees; and the function of examining these facts, with a view to maintaining federal interests, that is, of the States as a whole, clearly belongs to the Commonwealth Government. Such an examination demands as a basis at least a justly formed aggregation of the statistical data of each State.

It may be said, further, that the development of Australian trade with other countries renders it important that the statistical records of the Commonwealth should also afford adequate information as to the distribution and magnitude of its various productive activities, and that, too, from the standpoint of Australia as a political entity having a definite relation to the other parts of the British Empire, and to the outside world generally. In fact, to put it briefly, Australia, in founding a satisfactory statistical technique, is merely establishing what every civilised nation has found to be an essential of good government.

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[1] "En dehors de l'uniformité, pas de salut en statistique." Statistique Administrative, 1895, p. 8.

3. **International Uniformity in Statistic.**—The great feature of the modern progress in statistics is the endeavour to so arrange its technique, to so determine its categories of inquiry and the forms in which its data are furnished, as to enable the affairs of any one nation to be justly compared with those of any other. This advance means that the trend of events, the development of the people and of their wealth, can be properly studied, not only as regards the several parts of a large territory, but also as regards the whole civilised world, only if the fundamental principles governing international statistics be rigorously observed. For this reason, in organising a federal bureau of statistics, it is most important that its methods should be based upon international precedents.

§ 5. Devolution of Census and Statistics to the Commonwealth.

1. **The Commonwealth Constitution in respect of Statistics.**—In the Imperial Act, 63° and 64° Victoriæ, Cap. 12 (the "Act to constitute the Commonwealth of Australia," and generally known as the "Commonwealth of Australia Constitution Act"), Part V. of Chapter I. defines the Powers of the Parliament. Section 51 reads:—"The Parliament " shall, subject to the Constitution, have power to make laws for the peace, order, and " good government of the Commonwealth, with respect to—

(*inter alia*) " (xi.) Census and Statistics."

2. **Exercise of Prerogative in Creating a Census and Statistics Bureau.**—After conferences with the State Governments the Commonwealth Government decided to exercise its power under the Constitution, so that the responsibility of matters concerning the taking of Censuses, and the compilation and publication of statistics, should devolve upon the Commonwealth Government itself. To this end it passed the "Census and Statistics Act of 1905," the importance of which will be clearly perceived as soon as its provisions are studied. Because of this importance the Act is reproduced here *in extenso*.

§ 6. The Census and Statistics Act of 1905.

1. **General Review of the Act.**—The Census and Statistics Act provides—(*a*) for the constitution of the administrative scheme through which it is to achieve its end; (*b*) for the taking of a decennial Census; and (*c*) for the collection of statistics generally. It requires, under penalties, that information demanded by the Statistician shall be furnished, whether for census or other statistical purposes, that in the prosecution of necessary inquiries he may enter and inspect factories, mines, workshops, etc., that he shall tabulate and publish statistical information collected.

2. **The Act.**—The following is the Act:—

THE COMMONWEALTH OF AUSTRALIA CENSUS AND STATISTICS.

No. 15 *of* 1905. *An Act relating to the Census and Statistics of the Commonwealth. Assented to 8th December*, 1905.

BE it enacted by the King's Most Excellent Majesty, the Senate, and the House of Representatives of the Commonwealth of Australia as follows:—

PART I.—INTRODUCTORY.

1. This Act may be cited as the *Census and Statistics Act* 1905.
2. This Act is divided into parts as follows:

Part I.—Introductory. Part II.—Administration. Part III.—The Census. Part IV.—Statistics. Part V.—Miscellaneous.

3. In this Act, unless the contrary intention appears—

"Commissioner for Affidavits" means a person authorised under the law of the Commonwealth or of a State to take affidavits or declarations.

"Dwelling" means a building, erection, or tenement, whether permanent or temporary, which is wholly or partly used for the purpose of human habitation and includes any ship or other vessel in any port of the Commonwealth or in any inland waters thereof, or any ship or vessel registered in Australia on a passage between any two Commonwealth ports.

"Factory" means any work, mill, or establishment, used for the purpose of manufacturing, treating or preparing any article.

"Occupier" includes every governor, superintendent, officer-in-charge, or keeper, of any gaol, prison, hospital, lunatic asylum, or public or charitable institution.

"The Statistician" means the Commonwealth Statistician.

PART II.—ADMINISTRATION.

4.—The Governor-General may appoint a Commonwealth Statistician, who shall have such powers and perform such duties as are conferred or imposed on him by this Act or the regulations.

5.—(*1*). The Statistician, in relation to any particular matters or class of matters or to any particular State or part of the Commonwealth, with the approval of the Minister, may by instrument under his hand, delegate any of his powers under this Act (except this power of delegation) so that the delegated powers may be exercised by the delegate with respect to the matters or class of matters or the State or part of the Commonwealth specified in the instrument of delegation.

(*2*). Every delegation shall be revocable in writing, at will, and no delegation shall affect the exercise or performance by the Statistician of any power or duty.

6.—(*1*). The Governor-General may enter into any arrangement with the Governor of any State providing for any matter necessary or convenient for the purpose of carrying out or giving effect to this Act and in particular for all or any of the following matters:—

(*a*) The execution by State Officers of any power or duty conferred or imposed on any officer under this Act or the regulations;

(*b*) The collection by any State Department or officer of any statistical or other information required for the purpose of carrying out this Act; and

(*c*) The supplying of statistical information by any State Department or officer to the Statistician.

(*2*). All State Officers executing any power or duty conferred or imposed on any officer under this Act or the regulations, in pursuance of any arrangement entered into under this section, shall for the purposes of the execution of that power or duty be deemed to be officers under this Act.

7. Every officer executing any power or duty conferred or imposed on any officer under this Act or the regulations, shall, before entering upon his duties or exercising any power under this Act, make before a Justice of the Peace or Commissioner for Affidavits a declaration in accordance with the prescribed form.

PART III.—THE CENSUS.

8.—(*1*). The Census shall be taken in the year One thousand nine hundred and eleven and in every tenth year thereafter.

(*2*). The Census Day shall be a day appointed for that purpose by proclamation.

9. It shall be the duty of the Statistician, subject to the regulations and to the directions of the Minister, to prepare and issue forms and instructions, and take all necessary steps for the taking and collection of the Census.

10.—(*1*). For the purpose of taking the Census, a form called the Householder's Schedule shall be prepared, and left, in accordance with the regulations, at every dwelling throughout the Commonwealth.

(*2*). Where a dwelling is let, sub-let, or held in different apartments and occupied by different persons or families, each part so let, sub-let, or held and used for the purpose of human habitation shall be deemed a dwelling house.

11. Every occupier of a dwelling, with or for whom a Householder's Schedule has been left, shall, to the best of his knowledge and belief, fill up and supply therein, in accordance with the instructions contained in or accompanying the Schedule, all the particulars specified therein, and shall sign his name thereto and shall deliver the Schedule so filled up and signed to the Collector authorised to receive it. Penalty, £10.

12. The particulars to be specified in the Householder's Schedule shall include the particulars following:—

(*a*) The name, sex, age, condition as to, and duration of, marriage, relation to head of the household, profession or occupation, sickness or infirmity, religion, education, and birthplace, and (where the person was born abroad) length of residence in Australia and nationality of every person abiding in the dwelling during the night of the Census Day;
(*b*) The material of the dwelling and the number of rooms contained therein;
(*c*) Any other prescribed matters.

13. It shall be the duty of each Collector if requested to assist occupiers of dwelling houses in filling up the Householder's Schedule, and to satisfy himself by inquiries from occupiers of dwellings or other persons that the Householder's Schedule has been correctly filled up.

14. Every person shall, to the best of his knowledge and belief, answer all questions asked him by a Collector necessary to obtain any information required to be filled up and supplied in the Householder's Schedule. Penalty, £10.

15.—(*1*). The Statistician shall obtain such returns and particulars as are prescribed with respect to persons who, during the night of the Census Day were not abiding in any dwelling.

(*2*). Every person shall, on being required by the Statistician so to do, furnish to the best of his knowledge and belief any prescribed particulars relating to persons who were not abiding on the night of the Census Day in any dwelling. Penalty, £10.

PART IV.—STATISTICS.

16. The Statistician shall, subject to the regulations and the directions of the Minister, collect, annually, statistics in relation to all or any of the following matters:—

(*a*) Population;
(*b*) Vital, social, and industrial matters;
(*c*) Employment and non-employment;
(*d*) Imports and exports;
(*e*) Interstate trade;
(*f*) Postal and telegraphic matters;
(*g*) Factories, mines, and productive industries generally;
(*h*) Agricultural, horticultural, viticultural, dairying, and pastoral industries;
(*i*) Banking, insurance, and finance;
(*j*) Railways, tramways, shipping, and transport;
(*k*) Land tenure and occupancy; and
(*l*) Any other prescribed matters.

17. For the purpose of enabling the statistics referred to in this Part of this Act to be collected, all prescribed persons shall, to the best of their knowledge, when required by the Statistician so to do, fill up and supply, in accordance with the instructions contained in or accompanying the prescribed form, the particulars specified in that form. Penalty, £10.

18. Every person shall, to the best of his knowledge and belief, answer all questions asked him by the Statistician or an officer authorised in writing by the Statistician, necessary to obtain any information required for the purposes of any statistics authorised by this Act to be collected. Provided that no prosecution for contravention of this section shall be instituted without the consent of the Minister. Penalty, £10.

19.—(*1*). For the purpose of making any inquiries or observations necessary for the proper carrying out of this Act, the Statistician or any officer authorised in writing by him may, at any time during working hours, enter any factory, mine, work-shop, or place where persons are employed, and may inspect any part of it, and all plant and machinery used in connection with it, and may make such inquiries as are prescribed or allowed by the regulation.

(*2*). No person shall hinder or obstruct the Statistician or any officer authorised in writing by him in the execution of any power conferred by this section. Penalty, £10.

20.—(*1*). The Statistician shall compile and tabulate the statistics collected pursuant to this Act and shall publish such statistics or abstracts thereof, as the Minister directs, with observations thereon.

(*2*). All statistics or abstracts prepared for publication and the Statistician's observations thereon (if any) shall be laid before both Houses of the Parliament.

PART V.—MISCELLANEOUS.

21. No person shall be liable to any penalty for omitting or refusing to state the religious denomination or sect to which he belongs or adheres.

22. No officer, after having taken the prescribed declaration, shall desert from his duty, or shall refuse or wilfully neglect, without just excuse, to perform the duties of his office. Penalty, £20.

23. No officer shall wilfully or without lawful authority alter any document or form under this Act or shall wilfully sign any untrue document or form. Penalty, £50.

24. No officer shall, except as allowed by this Act or the regulations, divulge the contents of any form filled up in pursuance of this Act, or any information furnished in pursuance of this Act. Penalty, £50.

25. Any person who forges, or utters knowing it to be forged, any form or document under this Act, shall be guilty of an indictable offence, and liable to imprisonment for a term not exceeding three years.

26. No person shall knowingly make in any form or document filled up or supplied in pursuance of this Act or in answer to any question asked him under the authority of this Act any statement which is untrue in any material particular. Penalty, £50.

27. The Governor-General may make regulations, not inconsistent with this Act, prescribing all matters and things which, by this Act, are required or permitted to be prescribed, or which are necessary or convenient to be prescribed for carrying out or giving effect to this Act.

§ 7. Creation of the Commonwealth Bureau of Census and Statistics.

1. **Appointment of Commonwealth Statistician and Staff.**—On 18th June, 1906, the first Statistician for the Commonwealth of Australia was appointed. Before creating the Commonwealth Bureau of Census and Statistics, the statistical work being done in the several States was examined. This work was carried out partly by the Commonwealth departments of Trade and Customs and that of Posts, Telegraphs, and Telephones, and partly by the State Statisticians. The principal professional officers of the Commonwealth Bureau had also to be selected.

The professional officers appointed to the command of the various greater divisions of statistic in this Bureau were:—

JOHN STONHAM, M.A., Sydney University (Chief Compiler).
HENRY SPONDLY, Zurich University.
CHARLES HENRY WICKENS, Associate of the Institute of Actuaries.
FREDERICK DALGLISH ROSSITER, M.A., Melbourne University.
EDWARD TANNOCH MCPHEE, Tasmanian Statistical Bureau.

Each of these officers had had long experience in the practical work of compiling, each possessed the requisite mathematical and linguistic attainments for the branches of statistic with which he was called upon to deal, and each had special qualifications in particular branches of statistic.

2. **Organisation of the Bureau.**—Through the Foreign Office of the British Government the Commonwealth Statistician was placed in direct communication with the chiefs of statistical and similar departments throughout the world, and foreign Governments were asked—(*a*) to furnish their statistical publications, including such back numbers as could be spared; and (*b*) to enter into a general arrangement for exchange of publications. It would be impossible to speak too highly of the generous response which has been made to this request, a request to which a young country like Australia can make adequate return only in the somewhat distant future. Owing to this generous response the Library of the Bureau is now excellently furnished in respect of foreign publications: it possesses those of almost every country in the world. The necessary professional library and material equipment was also obtained, and the professional activity of the Bureau commenced by endeavouring to secure a higher degree of uniformity and accuracy in Australasian Statistic. This will again be referred to hereinafter.

3. **The Technical Library of the Bureau.**—Although the more purely technical portion of the Library of the Bureau has not reached normal requirements, the Commonwealth Government has made it possible to create a well-selected nucleus of works of reference, treatises on the technique of statistics in the several leading languages, dictionaries of languages, works on special branches of statistic, economics, finance and statecraft, actuarial and similar matters. The library has also been equipped with tolerably complete sets of the leading British and foreign journals of Statistical and Actuarial Science, and with necessary works on higher mathematics.

§ 8. The Statistical Conference of 1906.

1. **Personnel, etc., of Conference.**—A Conference of Statisticians was convened for the end of November, and actually met on the 30th of that month and the succeeding days till 8th December, inclusive. All the States were represented, as also New Zealand. The following was the personnel of the Conference:—

Commonwealth of Australia ...	G. H. KNIBBS, F.S.S., F.R.A.S., etc., Commonwealth Statistician, President of the Conference.
New South Wales	H. C. L. ANDERSON, M.A., Director of Intelligence Department and Bureau of Statistics.
Victoria	E. T. DRAKE, Government Statist.
Queensland	THORNHILL WEEDON, F.S.S., Government Statistician and Registrar-General.
South Australia	L. H. SHOLL, I.S.O., Chief Under-Secretary and Government Statistician.
Western Australia	C. H. WICKENS, A.I.A., late Actuary and Compiler, Government Statistician's Office, Perth, W.A.
Tasmania	R. M. JOHNSTON, F.S.S., I.S.O., etc., Government Statistician and Registrar-General.
New Zealand	E. J. VON DADELSZEN, Registrar-General and Government Statistician.

Before the Conference actually met, however, an exhaustive but rapid examination of the whole range of Australian Statistic was made by the Commonwealth Statistician, and over 150 forms for unifying statistical returns were prepared. On opening, an address was given pointing out the main object of the Conference, and in what way the Statistics of Australia could be fundamentally improved. Uniformity as regards method, matter, and time of collection was essential. The desirableness of giving some indication of the address is obvious, and, as it discloses the policy of the Bureau, necessary for public information in the wider sense.

2. Abridged Extracts from Commonwealth Statistician's Address.—The Conference met for the following specific purposes, viz.:—

(i.) To determine, *(a)* the means by which uniformity in the statistical categories of the Australian State Bureaux, and an equal degree of accuracy in each could be secured; and *(b)* the methods of so collecting statistical information as to insure, with uniform categories and equally accurate aggregates, the greatest possible uniformity in the significance of statistical results.

(ii.) To definitely fix the localities to which the various statistical aggregates shall apply.

(iii.) To decide upon, *(a)* the best practical means of collecting statistical information regarding primary and secondary production and industry in all its bearings; *(b)* the best method of forming estimates of the quantity and value of production generally, and *(c)* the means of obtaining exact statistics relating to all matters of finance and economics generally.

(iv.) To secure greater precision in each branch of vital statistics, and in statistics relating to social condition.

(v.) To insure accuracy in estimating the fluctuation of population in the Australian States, and to secure a uniform practice in regard thereto.

(vi.) To consider the means of obtaining accurate records of Interstate Trade.

(vii.) To adopt a complete set of forms required for the collection of statistical data.

(viii.) And to consider all other matters which may be necessary for giving full effect to the programme outlined.

The imperative necessity for uniformity, method, and order and date of compilation was referred to in the following terms:—

"It must be evident that statistical uniformity is an essential in regard to statistical data sought by the Commonwealth. In this there can be no *via media*." . . . "At the present time no definite order of sequence has been adopted by all the States in issuing the various chapters of their Statistical Registers. Indeed, a State does not always pursue the same order in its successive issues. While this does not much matter from a purely State point of view, its persistence would strike at the very foundation of that principle of uniformity which must necessarily be the basis of Commonwealth statistical policy. If the Federal statistical aggregates are to be issued within a reasonable time, a definite order in the preparation of each branch of statistics" must be followed . . . "The fundamental question for the consideration of the Conference is not the academic one, 'whether it be possible to elaborate a set of ideally perfect forms,' but the practical one, 'whether the information can be collected through the various State Bureaux in accordance with the forms adopted,' and in order that the proper advantage should be derived from the unification of statistical method throughout Australasia, it is necessary that the response of each State to the demand for statistical information should be co-extensive.

After paying a tribute to the excellent work done by the police as "enumerators with special qualifications," and pointing out that in largely requisitioning their services, we are simply following the lead of advanced countries, reference was made to the need for greater attention to the localisation of statistical aggregates, in the following terms:—

"Every one who has closely studied statistics will recognise that to make statistical information precise, and to make it adequately informative, it will be necessary to do two things, viz.:—*(a)* Localise the collection of statistics so that they will refer to definite corresponding areas, and *(b)* So determine the boundaries of such areas that they shall be coterminous and fixed. Speaking generally, it may be said that, at the present time, the territorial divisions for different purposes pay little regard to each other; there has been no adequate attempt to so divide the Australian States that the larger divisions for any one purpose shall be coterminous with boundaries fixed for other purposes. In other words, the regional divisions for different purposes often have in general no definite relation to each other, nor do they embrace a whole number of smaller divisions with coterminous boundaries."

It was pointed out as eminently desirable that, before the Census of 1911, the matter should be resolved. The various territorial sub-divisions existing are as follows:—

VARIOUS TYPES OF AREAS INTO WHICH THE STATES ARE DIVIDED.

Agricultural Areas and Districts
Boards of Advice Areas
Board of Works Districts
Boroughs
Circuits
Cities
Counties
Electoral (Commonwealth) Divisions and possibly Sub-Divisions, Polling Areas, etc.
Electoral (State) Districts, Provinces, Divisions, Sub-Divisions, etc.
Harbour Trust Areas
Irrigation Areas
Land Boards and Survey Districts
Land Districts
Land Divisions
Local Government Areas
Magisterial Districts
Meteorological Zones or Units
Mining Districts (various)
Municipalities
Parishes and Hundreds
Petty Sessions Districts
Police Districts
Ports, Harbour Areas
Post Delivery Districts
Public Health Districts
Quarter Sessions Districts
Registration (Births, Deaths, and Marriages) Districts
Road Districts
School Board Districts
Shires
States
Stock Districts
Telegraph (Lineman's Sections)
Telephone (Exchange) Areas
Towns
Vermin Destruction Districts
Water Supply Areas.

It was urged that in order that "no ordinary statistical question regarding the distribution of the population, of its qualified voters, of its agricultural, commercial, industrial, mining, pastoral, or viticultural activities should remain insusceptible of immediate and accurate answer," in order that all "specific forms of primary industry may be discussed in relation to means of communication," and in order that all questions relating to "the extent of our various natural resources, of deforestation and natural and artificial reafforestation, of the probable consequences of water conservation and irrigation, and in fact any project for developing our territory, should be susceptible of analysis," it is necessary to definitively localise statistical aggregates.

Regarding simultaneity in the order of supply of information, the following was suggested, viz.:—

SUGGESTED ORDER IN WHICH INFORMATION SHALL BE SUPPLIED.

(i.) Population
(ii.) Vital Statistics
(iii.) Education
(iv.) Mining Industry
(v.) Law and Crime
(vi.) Forestry and Fisheries
(vii.) Land Settlement
(viii.) Agriculture
(ix.) Pastoral Industry (including Dairying)
(x.) Manufactories
(xi.) Wages
(xii.) Savings Banks
(xiii.) Railways and Tramways
(xiv.) Public Finance
(xv.) Private Finance (excl. Savings Banks)—
    Building and Investment Societies
    Co-operative Societies
    Companies
    Industrial and Trade Unions
    Friendly Societies
    Probates
(xvi.) Local Government
(xvii.) Hospitals and Charities.

In regard to Statistics of Trade and Customs, it was said that "an endeavour has been made to take account of the principles of classification agreed upon at the Hobart Conference of Statisticians in 1902. This classification has, however, not been generally followed by the State Bureaux, nor has it been possible to strictly adhere to it now. Some advance towards the adoption of a better classification than a merely alphabetical one has, however, been made, as the following outline will shew. It aims at collecting commodities in large groups of analogous character."

CATEGORIES OF ITEMS IN TRADE AND CUSTOMS STATISTICS.

Class No.	
(i.)	Foodstuffs of Animal Origin, but excluding Living Animals
(ii.)	Foodstuffs of Vegetable Origin
(iii.)	Beverages (non-alcoholic) and Substances used in making
(iv.)	Spirits and Alcoholic Liquors, including Spirits for Industrial Purposes, and Pharmaceutical Preparations dutiable as Spirits
(v.)	Tobacco and preparations thereof
(vi.)	Live Animals
(vii.)	Animal Substances (mainly unmanufactured) not Foodstuffs
(viii.)	Vegetable Substances and Fibres
(ix.)	Apparel, Textiles, and Manufactured Fibres
(x.)	Oils, Fats, and Waxes
(xi.)	Paints and Varnishes
(xii.)	Stones and Minerals used industrially
(xiii.)	Metals (unmanufactured) and Ores
(xiv.)	Metals, partly manufactured
(xv.)	Metals (manufactured), including Machinery
(xvi.)	Specie
(xvii.)	Leather and Manufactures of Leather, and substitutes therefor; also Indiarubber and Indiarubber Manufactures
(xxiii.)	Wood and Wicker, raw and manufactured
(xix.)	Earthenware, Cements, China, Glass, and Stoneware
(xx.)	Paper and Stationery
(xxi.)	Jewellery, Timepieces, and Fancy Goods
(xxii.)	Optical, Surgical, and Scientific Instruments
(xxiii.)	Drugs, Chemicals, and Fertilizers
(xxiv.)	Miscellaneous
(xxv.)	Excise.

The value of a complete record of Interstate Trade in Australia was urged, and of treating shipping statistics in such a manner as to disclose the significance of the traffic, and of the various ports of call or destination.

The question of the Census was dealt with, but will be referred to elsewhere, viz., in dealing with the question of population.

3. **Resume of the Conference Resolutions.**—The details of the resolutions are rather of technical than general interest. The following indication of their main features will therefore be adequate for ordinary reference. The several provisions or requirements mentioned hereunder were unanimously affirmed as desirable:—

(i.) In the interests alike of each State and the Commonwealth the collection and compilation of statistical information by the State Statistical Bureaux should be co-extensive, and, within the limits indicated by the adopted forms, uniform in respect of method and order and date of compilation; and each State Bureau should be equipped so as to make it possible to respond to this demand.

(ii.) Excepting in the case of information confidentially collected, or compilation confidentially made for the State or Commonwealth Governments, the whole of the statistical information in each Statistical Bureau should be immediately available to the Commonwealth or State Statisticians.

(iii.) In order to secure uniformity in the compilation and interpretation of statistical data, a complete scheme of instructions should be drafted by the Commonwealth Statistician for general adoption.

(iv.) The classification of the International Institute of Statistics should be adopted.[1]

(v.) A quinquennial enumeration of population is necessary owing to the rapid movement of population in Australia.

(vi.) A monthly record of Interstate Trade should be furnished.

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[1] The Commonwealth Statistician was asked to translate the necessary nosological classification, which he has since done.

(vii.) Statistics of production should be so published as never to disclose the operations of individual establishments, and, in general, in order to engender the necessary confidence in the minds of informants as to the strictly impersonal nature of statistical inquiries, and so secure readiness to furnish accurate information, the customary statistical practice of maintaining absolute secrecy should, under no circumstances, be departed from.

(viii.) Statistical publications of the Commonwealth and States should be of uniform sizes, and uniform as to order of matter.

(ix.) Trade Statistics should be published for each calendar year in accordance with the categories referred to (Sub-section 2) hereinbefore, and in statistics of export the State of origin should be shewn.

(x.) All questions of mathematical method, mode of determining means, etc., shall be decided for all States by the Commonwealth Statistician.

Effect is gradually being given to these resolutions as opportunity offers; the Statistics of Trade and Customs, however, for 1906 have been published as heretofore under the alphabetical arrangement, in response to the urgent request of the Trade and Customs Department.

§ 9. Sources of Information.

1. **State Statistical Bureaux.**—The State Statistical Bureaux are now endeavouring, under the authority of the Census and Statistics Act, to collect and arrange all information under a common method and according to uniform categories. The State Bureaux will, therefore, have a double function, viz., they will collect—(*a*) for their immediate requirements as States, and (*b*) as integral parts of the Commonwealth. The collections are made—(i.) by the police, (ii.) by special collectors, (iii.) by direct demand for returns, and (iv.) by compilation from official departmental reports.

2. **Commonwealth and State Departments.**—All statistical compilations of Commonwealth and State Departments are forwarded as soon as published, and occasionally in manuscript prior to publication, to the "Commonwealth Bureau of Census and Statistics," for the purpose of facilitating official statistical compilation on behalf of the Commonwealth.

3. **Scientific and Technical Experts.**—The services of scientific and technical experts are requisitioned where necessary, so that the whole of the information published under the auspices of the Commonwealth will be as authoritative and accurate as it is possible to make it.

4. **Direct Inquiry by Commonwealth Bureau.**—Where necessary, direct demands for information will be made by the Commonwealth Bureau itself, in order to comply with the scope of statistical information authorised by the Act. These demands must, according to this Act, be complied with, but the conditions under which the demands will be made will, wherever possible, be such as to minimise the labour of responding thereto. Absolute secrecy as to the results of individual responses will also always be maintained, and the information collected by the Bureau be used *exclusively* for statistical purposes.

SECTION II.

FEDERATION AND FEDERAL LEGISLATION.

§ 1. The Federal Movement in Australia.

1. **Early Stages of the Federal Movement.**[1]—Notwithstanding that the early tendencies of Australia were those of a separate evolution of isolated settlements, attempts were made to bring about some measure of intercolonial reciprocity. Partly through the attitude of the Colonial Office, and partly through the want of sympathy that had already risen as between one colony and another, these attempts at first came to nought. Governor Fitzroy in a despatch dated as early as 29th September, 1846, realised the desirableness of considering the interests of the Australian colonies in their generality. Earl Grey's still more notable despatch of 31st July, 1847, recognised that there are questions which affected "Australia collectively, the regulation of which, in some uniform manner and by some single authority, may be essential to the welfare of them all," and "a central legislative authority for the whole of the Australian colonies" was actually contemplated. The "apprehension and dismay" which was then expressed, retarded, however, the issue. In 1849, a Committee of the Privy Council recommended, in addition to a uniform tariff, that one of the Governors should be constituted "Governor-General of Australia," and be authorised to convene a "General Assembly of Australia," to consist of a single House of from 20 to 30 delegates. Sir Charles Fitzroy was actually appointed "Governor-General of all Her Majesty's Australian Possessions"; and thus the Governor of New South Wales was constituted a sort of advisory over-lord of Australia, a distinction which, however, was practically but nominal, and which soon ceased (1861). In 1853, Wentworth's Constitutional Committee indicated the need for "the establishment at once of a General Assembly," but a really national unity for Australia was not contemplated. Dr. Lang's idea of a "great federation of all the colonies of Australia," propounded in 1852, was ridiculed by Wentworth. A Victorian committee in 1853 reiterated the desirableness of a "General Assembly."

In 1854, in the *Sydney Morning Herald*, "John Adams" (Revd. John West), urged the need of union, and in 1857 a memorial by Wentworth to the Secretary of State for the Colonies emphasised the need of a "Federal Assembly," which, it was suggested, should be perambulatory. An "Enabling Bill," drafted to empower two or more Legislatures to create the Assembly, met, however, with a discouraging reception; Her Majesty's Government would not promote the object of the memorialists. This Bill, though it provided for equal representation on the preliminary Convention, did not bind that Convention to the principle of equal representation in the Federal Assembly. In January, 1857, Mr. (afterwards Sir) Charles Gavan Duffy, brought about the appointment of a "Select Committee" of the Legislative Assembly of Victoria, "to inquire into and report upon the necessity of a federal union of the Australasian Colonies," etc., with the result that the ultimate necessity of a federal union was unanimously affirmed, most believing that the time for union had actually arrived.

In August of the same year, a Select Committee of the Legislative Council of New South Wales was appointed "to consider and report upon the expediency of establishing a Federal Legislature," etc. It was pointed out that Imperial legislation was necessary, and that the matter could not be postponed without the danger of creating serious antagonism and jealousy. When it seems to have been in a fair way to have realised union, the advent of the Cowper administration in New South Wales, with Mr. (afterwards Sir) James Martin as the dominating personality of the Cabinet, blotted out the hope, since neither Mr. Cowper nor Mr. Martin cared for the federal ideal. South Australia in the same year, and Queensland in the year 1859, were still less favourable to the federal scheme. In 1860, Mr. Duffy's attempt to bring about a Conference on Federal Union failed also.

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[1] For a presentation in succinct form of the history of the federal movement, reference may be made to the masterly sketch in Part IV., with the title, "The Federal Movement in Australia," in "The Annotated Constitution of the Australian Commonwealth," pp. 79-261, by the Hon. Sir John Quick, LL.D.; and Robert Randolph Garran, M.A., C.M.G., Sydney, Melbourne and London, 1901, pp. xl-1008.

Though Federation proved unattainable, the differences in the tariffs enforced political attention. On the adoption of the 1855 Tariff of New South Wales, trade across the Murray River became free (1st November, 1855). In 1862, the Colonial Secretary of South Australia having opened up a correspondence with the other colonies on the question of a uniform tariff, Mr. Duffy again tried to bring about a consideration of the larger question of Australian Federation, the resulting conference meeting in Melbourne in March, 1863. Intercolonial Conferences were resorted to between 1863 and 1880 to secure such uniform legislation and concerted administration as appeared desirable. At one of these (March, 1867), Mr. (afterwards Sir) Henry Parkes came into prominent notice as an advocate of Federation, expressing himself in the following terms:—" . . . The time has arrived when these colonies should be united by some federal bond. . . . There are questions projecting themselves . . . which cannot be dealt with by . . . individual Governments. . . . I believe it will lead to a permanent federal understanding." A Bill passed was, however, shelved by the Home Government.

2. **The Federal Council.**—A distinct stage in the progress toward Federation was marked by the Conference of November and December, 1880, and January, 1881. It was affirmed, *inter alia*, that the time had arrived when a Federal Council should be created to deal with intercolonial matters, but in submitting the Bill for the creation of this council, it was affirmed that "the time is not come for the construction of a Federal Constitution, with an Australian Federal Parliament." Nothing practical, however, was done; in fact, till 1883 every proposal for either complete or partial federation wholly failed. At a banquet at Albury, to signalise the junctioning of the railway systems of New South Wales and Victoria, Mr. James Service said:—"We want federation, and we want it now." But internal necessity was apparently not strong enough to crystallise federation into an actuality, until the external need was brought home to all the colonies by increased activity of foreign powers in the Pacific. The weakness of independent colonies was shewn by the situation which arose through Sir Thomas McIlwraith's action in taking possession of New Guinea. This action was not endorsed by the Home Government, and it was manifest that effective representation to that Government was well-nigh impossible for individual and unfederated colonies. On 28th November, 1883, a "Convention" met in Sydney, at which the seven colonies and Fiji were all represented. Mr. Service had in view the establishment of a really federal Government, but the Bill drafted was a "Bill to establish only a Federal Council of Australasia." In July and August, 1884, the Legislatures of Victoria, Tasmania, Queensland, Western Australia, and Fiji addressed the Crown praying for the enactment of the Federal Council Bill. New South Wales and New Zealand held aloof. Sir Henry Parkes regarded such a council as likely to "impede the way for a sure and solid Federation."

The Bill, however, was introduced in the House of Lords on 23rd April, 1885, by the Earl of Derby, in response to the desires of the "Convention," and gave any colony power to secede from the council. It became law on 14th August, 1885, and was known as the "Federal Council of Australasia Act, 1885." The career of this council shewed that it could not hope to be effective, and it met for the last time in January, 1899.

3. **Formative Stages of the Federal Movement.**—Although the lot of Australia has happily been, thus far, peaceful, events as far back as 1878 brought a consciousness of the need for federal defence into prominence, and arrangements were entered into with the Imperial Government for a scheme of naval protection. This was ratified by

the Australasian Naval Force Acts, Queensland being the last to come into line, viz., in 1891. Early in 1889 Sir Henry Parkes had confidentially suggested to Mr. Duncan Gillies the necessity for a Federal Parliament and Executive. Unable to accept the latter's suggestion that New South Wales should give its adhesion to the Federal Council, the former statesman urged the institution of "a National Convention for the purpose of devising and reporting upon an adequate scheme of Federal Government." This led to the Melbourne Conference of 6th February, 1890. It was at the banquet on this occasion that, in proposing "A United Australasia," Mr. James Service pointed out that the tariff question was "a lion in the path," which federationists must either slay, or by which they must be slain; in the reply to which Sir Henry Parkes made use of his historic phrase, "the crimson thread of kinship runs through us all." Certain elements of doubt being expressed as to the motives underlying the movement, Sir Henry Parkes said:—"We desire to enter upon this work of Federation without making any condition to the advantage of ourselves, without any stipulation whatever, with a perfect preparedness to leave the proposed convention free to devise its own scheme, and, if a central Parliament comes into existence, with a perfect reliance upon its justice, upon its wisdom, and upon its honour. . . . I think . . . an overwhelming majority of my countrymen . . . will approve of the grand step . . . of uniting all the colonies under one form of beneficent government, and under one national flag."

The first National Australasian Convention, under the presidency of Sir Henry Parkes, was convened on 2nd March, 1891, all the colonies being represented, and also New Zealand. A Bill was drafted dealing comprehensively with the whole issue, giving federationists a definite plan of action, and anti-federationists a definite indication for attack. The draft Bill was considered by the Parliaments of New South Wales, Victoria, South Australia, and Tasmania, but not by those of Queensland, Western Australia, and New Zealand, and, in short, the parliamentary process of dealing with the matter may be said to have entirely failed. Federal sentiment, however, was strengthening. The collapse of the "land boom" had made apparent how intimately the interests of each colony are related; the dangers of disunion became more obvious. The Australian Natives' Association took up the federal cause with enthusiasm, Federation leagues were established, and the issues were intelligently and widely discussed. The late Sir George Dibbs' unification scheme helped to make the issue a real one. At the Conference of Premiers, which met at Hobart on 29th January, 1895, it was agreed that federation "was the great and pressing question of Australian politics," and that "the framing of a Federal Constitution" was an urgent duty. The resuscitation of the whole matter led to the passing of Enabling Acts. In New South Wales this received the Royal assent on 23rd December, 1895; South Australia anticipated this by three days; the Tasmanian Bill was passed on 10th January, 1896, the Victorian on 7th March, 1896; Western Australia fell into line on 27th October. The "People's Federal Convention," held at Bathurst, N.S.W., in November, 1896, gave a considerable impulse to the movement; to wait longer for Queensland was considered unnecessary, and the 4th March, 1897, was fixed as the date for the election of federal representatives for New South Wales, Victoria, South Australia, and Tasmania. Western Australia soon followed suit, and on 22nd March the representatives met at Adelaide. In the discussions it was evident that the federal progress in the point of view had been considerable. Constitutional, Finance, and Judiciary Committees were appointed, and a Bill drafted. This was reported to the Convention on 22nd April and adopted on the following day, the Convention adjourning till the 2nd September following. The Parliaments of New South Wales, Victoria, South Australia, Tasmania, and Western Australia discussed the question before the Sydney Session of the Convention, opened on the 2nd September, 1897. The business of the Convention involved the general reconsideration of the whole Bill, and the consideration of no less than 286 suggested amendments. The work was of great value, as it gave a definitive character to that of the Melbourne Session of 1898, extending from 20th January to 17th March. This particular session of the Federal Convention was of all the most important, and the necessity of reaching a final decision gave to its deliberations corresponding weight. After an interval of 11 weeks, a popular vote was taken in four colonies, viz., New South Wales, Victoria, Tasmania, and South Australia.

Western Australia took no action, and Queensland stood aloof. The vote was as follows:—

	New South Wales.	Victoria.	South Australia.	Tasmania.	TOTALS.
For Federation as drafted ...	71,595	100,520	35,800	11,797	**219,712**
Against ,, ,, ...	66,228	22,099	17,320	2,716	**108,363**
Majority ...	5,367	78,421	18,480	9,081	**111,349**

This majority in New South Wales being legally insufficient, the following day the Premier (Rt. Hon. G. H. Reid, P.C.) telegraphed to the other Premiers, inviting them to meet in conference with a view of amending the Bill. Queensland fell in with the suggestion. On 22nd January, 1899, the Premiers of the six colonies met at Melbourne, and as a result seven amendments were made in the Bill. This step was virtually the solvent of the few outstanding difficulties which could in any way be regarded as fundamental.

4. **Adoption and Enactment of the Constitution.**—After the necessary preliminaries, the 20th June, 1899, was the day fixed for the second referendum, the results on that day being:—

	New South Wales.	Victoria.	South Australia.	Tasmania.	Queensland.	TOTALS.
For Federation ...	107,420	152,653	65,990	13,437	38,488	**377,988**
Against ,, ...	82,741	9,805	17,053	791	30,996	**141,386**
Majority ...	24,679	142 848	48.937	12,646	7,492	**236,602**

"Never before," say Sir John Quick and Mr. Garran, "have a group of self-governing, practically independent communities, without external pressure or foreign complications of any kind, deliberately chosen of their own free will to put aside their provincial jealousies and come together as one people, from a simple intellectual and sentimental conviction of the folly of disunion and the advantages of nationhood. The States of America, of Switzerland, of Germany, were drawn together under the shadow of war. Even the Canadian provinces were forced to unite by the neighbourhood of a great foreign power. But the Australian Commonwealth, the fifth great federation of the world, came into voluntary being through a deep conviction of national unity."

On 22nd December, 1899, the Secretary of State for the Colonies (Mr. Joseph Chamberlain), expressed the hope that a delegation of the federating colonies should visit England, when the Commonwealth Bill was submitted to the Imperial Parliament. It was arranged that this delegation should consist of Mr. Edmund Barton (N.S.W.), Mr. Alfred Deakin (Vic.), Mr. C. C. Kingston (S.A.), Sir P. O. Fysh (Tas.). Mr. S. H. Parker was later appointed a delegate for Western Australia. Modifications having been suggested by the Imperial Crown Law Office, the delegates forwarded to the Secretary of State for the Colonies a memorandum, urging the passage of the Bill in the form affirmed in Australia. While the matter was under consideration, Mr. W. P. Reeves, the Agent-General, was appointed a delegate for New Zealand. The position of Western Australia and New Zealand in connection with the whole matter was well considered, and after a final memorandum (4th May) from the Imperial Government had been replied to by four of the delegates (8th May), the Commonwealth Bill was, on 14th May, introduced in the House of Commons. The second reading was moved on 21st of the month, and the discussion in Committee began on 18th June. The Royal Assent was given on 9th July, 1900.

On 31st July, Western Australia had a referendum on the question of federating, the result being:—

For, 44,800; against, 19,691; majority for, 25,109.

On the 21st August, both Houses of Parliament of Western Australia passed addresses praying that that State might be included as an "original State" of the Commonwealth.

On the 17th September, Her Majesty the late Queen signed the proclamation declaring that on and after the first day of January, 1901, the people of New South Wales, Victoria, South Australia, Queensland, Tasmania, and Western Australia, should be united in a Federal Commonwealth, under the name of the Commonwealth of Australia.

This, in the briefest possible outline, is the story of the laying of foundations of Australian nationhood, in the closing years of the 19th Century, and of the consummation of the Constitution under which it now advances.

§ 2. The Creation of the Commonwealth.

1. The Act.—It seems singularly appropriate that the first Official Year Book of the Commonwealth of Australia, should include a record of its Constitution. The following is the Act *in extenso*:—

THE COMMONWEALTH OF AUSTRALIA CONSTITUTION ACT.

63 & 64 VICT., CHAPTER 12.

An Act to constitute the Commonwealth of Australia. [*9th July, 1900.*]

WHEREAS the people of New South Wales, Victoria, South Australia, Queensland, and Tasmania, humbly relying on the blessing of Almighty God, have agreed to unite in one indissoluble Federal Commonwealth under the Crown of the United Kingdom of Great Britain and Ireland, and under the Constitution hereby established:

And whereas it is expedient to provide for the admission into the Commonwealth of other Australasian Colonies and possessions of the Queen:

Be it therefore enacted by the Queen's Most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, as follows:—

1. This Act may be cited as the Commonwealth of Australia Constitution Act.

2. The provisions of this Act referring to the Queen shall extend to Her Majesty's heirs and successors in the sovereignty of the United Kingdom.

3. It shall be lawful for the Queen, with the advice of the Privy Council, to declare by proclamation that, on and after a day therein appointed, not being later than one year after the passing of this Act, the people of New South Wales, Victoria, South Australia, Queensland, and Tasmania, and also, if Her Majesty is satisfied that the people of Western Australia have agreed thereto, of Western Australia, shall be united in a Federal Commonwealth under the name of the Commonwealth of Australia. But the Queen may, at any time after the proclamation, appoint a Governor-General for the Commonwealth.

4. The Commonwealth shall be established, and the Constitution of the Commonwealth shall take effect, on and after the day so appointed. But the Parliaments of the several colonies may at any time after the passing of this Act make any such laws, to come into operation on the day so appointed, as they might have made if the Constitution had taken effect at the passing of this Act.

5. This Act, and all laws made by the Parliament of the Commonwealth under the Constitution, shall be binding on the courts, judges, and people of every State and of every part of the Commonwealth, notwithstanding anything in the laws of any State; and the laws of the Commonwealth shall be in force on all British ships, the Queen's ships of war excepted, whose first port of clearance and whose port of destination are in the Commonwealth.

6. "The Commonwealth" shall mean the Commonwealth of Australia as established under this Act.

"The States" shall mean such of the colonies of New South Wales, New Zealand, Queensland, Tasmania, Victoria, Western Australia, and South Australia, including the northern territory of South Australia, as for the time being are parts of the Commonwealth, and such colonies or territories as may be admitted into or established by the Commonwealth as States; and each of such parts of the Commonwealth shall be called "a State."

"Original States" shall mean such States as are parts of the Commonwealth at its establishment.

7. The Federal Council of Australasia Act 1885 is hereby repealed, but so as not to affect any laws passed by the Federal Council of Australasia and in force at the establishment of the Commonwealth.

Any such law may be repealed as to any State by the Parliament of the Commonwealth, or as to any colony not being a State by the Parliament thereof.

8. After the passing of this Act the Colonial Boundaries Act 1895 shall not apply to any colony which becomes a State of the Commonwealth; but the Commonwealth shall be taken to be a self-governing colony for the purposes of that Act.

9. The Constitution of the Commonwealth shall be as follows:—

THE CONSTITUTION.

This Constitution is divided as follows:—

Chapter I.—The Parliament:—
  Part I.—General.
  Part II.—The Senate.
  Part III.—The House of Representatives.
  Part IV.—Both Houses of Parliament.
  Part V.—Powers of the Parliament.
Chapter II.—The Executive Government.
Chapter III.—The Judicature.
Chapter IV.—Finance and Trade.
Chapter V.—The States.
Chapter VI.—New States.
Chapter VII.—Miscellaneous.
Chapter VIII.—Alteration of the Constitution.

The Schedule.

CHAPTER I.—THE PARLIAMENT.

PART I.—GENERAL.

1. The legislative power of the Commonwealth shall be vested in a Federal Parliament, which shall consist of the Queen, a Senate, and a House of Representatives, and which is hereinafter called "The Parliament," or "The Parliament of the Commonwealth."

2. A Governor-General appointed by the Queen shall be Her Majesty's representative in the Commonwealth, and shall have and may exercise in the Commonwealth during the Queen's pleasure, but subject to this Constitution. such powers and functions of the Queen as Her Majesty may be pleased to assign to him.

3. There shall be payable to the Queen out of the Consolidated Revenue fund of the Commonwealth, for the salary of the Governor-General, an annual sum which, until the Parliament otherwise provides, shall be ten thousand pounds.

The salary of a Governor-General shall not be altered during his continuance in office.

4. The provisions of this Constitution relating to the Governor-General extend and apply to the Governor-General for the time being, or such person as the Queen may appoint to administer the Government of the Commonwealth; but no such person shall be entitled to receive any salary from the Commonwealth in respect of any other office during his administration of the Government of the Commonwealth.

5. The Governor-General may appoint such times for holding the sessions of the Parliament as he thinks fit, and may also from time to time, by Proclamation or otherwise, prorogue the Parliament, and may in like manner dissolve the House of Representatives.

After any general election the Parliament shall be summoned to meet not later than thirty days after the day appointed for the return of the writs.

The Parliament shall be summoned to meet not later than six months after the establishment of the Commonwealth.

6. There shall be a session of the Parliament once at least in every year, so that twelve months shall not intervene between the last sitting of the Parliament in one session and its first sitting in the next session.

PART II.—THE SENATE.

7. The Senate shall be composed of senators for each State, directly chosen by the people of the State, voting, until the Parliament otherwise provides, as one electorate.

But until the Parliament of the Commonwealth otherwise provides, the Parliament of the State of Queensland, if that State be an Original State, may make laws dividing the State into divisions and determining the number of senators to be chosen for each division, and in the absence of such provision the State shall be one electorate.

Until the Parliament otherwise provides there shall be six senators for each Original State. The Parliament may make laws increasing or diminishing the number of senators for each State, but so that equal representation of the several Original States shall be maintained and that no Original State shall have less than six senators.

The senators shall be chosen for a term of six years, and the names of the senators chosen for each State shall be certified by the Governor to the Governor-General.

8. The qualification of electors of senators shall be in each State that which is prescribed by this Constitution, or by the Parliament, as the qualification for electors of members of the House of Representatives; but in the choosing of senators each elector shall vote only once.

9. The Parliament of the Commonwealth may make laws prescribing the method of choosing senators, but so that the method shall be uniform for all the States. Subject to any such law, the Parliament of each State may make laws prescribing the method of choosing the senators for that State.

The Parliament of a State may make laws for determining the times and places of elections of senators for the State.

10. Until the Parliament otherwise provides, but subject to this Constitution, the laws in force in each State, for the time being, relating to elections for the more numerous House of the Parliament of the State shall, as nearly as practicable, apply to elections of senators for the State.

11. The Senate may proceed to the despatch of business, notwithstanding the failure of any State to provide for its representation in the Senate.

12. The Governor of any State may cause writs to be issued for elections of senators for the State. In case of the dissolution of the Senate the writs shall be issued within ten days from the proclamation of such dissolution.

13. As soon as may be after the Senate first meets, and after each first meeting of the Senate following a dissolution thereof, the Senate shall divide the senators chosen for each State into two classes, as nearly equal in number as practicable; and the places of the senators of the first class shall become vacant at the expiration of the third year, and the places of those of the second class at the expiration of the sixth year, from the beginning of their term of service; and afterwards the places of senators shall become vacant at the expiration of six years from the beginning of their term of service.

The election to fill vacant places shall be made in the year at the expiration of which the places are to become vacant.

For the purposes of this section the term of service of a senator shall be taken to begin on the first day of January following the day of his election, except in the cases of the first election and of the election next after any dissolution of the Senate, when it shall be taken to begin on the first day of January preceding the day of his election.

14. Whenever the number of senators for a State is increased or diminished, the Parliament of the Commonwealth may make such provision for the vacating of the places of senators for the State as it deems necessary to maintain regularity in the rotation.

15. If the place of a senator becomes vacant before the expiration of his term of service, the Houses of Parliament of the State for which he was chosen shall, sitting and voting together, choose a person to hold the place until the expiration of the term, or

until the election of a successor as hereinafter provided, whichever first happens. But if the Houses of Parliament of the State are not in session at the time when the vacancy is notified, the Governor of the State, with the advice of the Executive Council thereof, may appoint a person to hold the place until the expiration of fourteen days after the beginning of the next session of the Parliament of the State, or until the election of a successor, whichever first happens.

At the next general election of members of the House of Representatives, or at the next election of senators for the State, whichever first happens, a successor shall, if the term has not then expired, be chosen to hold the place from the date of his election until the expiration of the term.

The name of any senator so chosen or appointed shall be certified by the Governor of the State to the Governor-General.

16. The qualifications of a senator shall be the same as those of a member of the House of Representatives.

17. The Senate shall, before proceeding to the despatch of any other business, choose a senator to be the President of the Senate; and as often as the office of President becomes vacant the Senate shall again choose a senator to be the President.

The President shall cease to hold his office if he ceases to be a senator. He may be removed from office by a vote of the Senate, or he may resign his office or his seat by writing addressed to the Governor-General.

18. Before or during any absence of the President, the Senate may choose a senator to perform his duties in his absence.

19. A senator may, by writing addressed to the President, or to the Governor-General if there is no President or if the President is absent from the Commonwealth, resign his place, which thereupon shall become vacant.

20. The place of a senator shall become vacant if for two consecutive months of any session of the Parliament he, without the permission of the Senate, fails to attend the Senate.

21. Whenever a vacancy happens in the Senate, the President, or if there is no President or if the President is absent from the Commonwealth the Governor-General, shall notify the same to the Governor of the State in the representation of which the vacancy has happened.

22. Until the Parliament otherwise provides, the presence of at least one-third of the whole number of the senators shall be necessary to constitute a meeting of the Senate for the exercise of its powers.

23. Questions arising in the Senate shall be determined by a majority of votes, and each senator shall have one vote. The President shall in all cases be entitled to a vote; and when the votes are equal the question shall pass in the negative.

PART III.—THE HOUSE OF REPRESENTATIVES.

24. The House of Representatives shall be composed of members directly chosen by the people of the Commonwealth, and the number of such members shall be, as nearly as practicable, twice the number of the senators.

The number of members chosen in the several States shall be in proportion to the respective numbers of their people, and shall, until the Parliament otherwise provides, be determined, whenever necessary, in the following manner:—

(i.) A quota shall be ascertained by dividing the number of the people of the Commonwealth, as shown by the latest statistics of the Commonwealth, by twice the number of the senators:

(ii.) The number of members to be chosen in each State shall be determined by dividing the number of the people of the State, as shown by the latest statistics of the Commonwealth, by the quota; and if on such division there is a remainder greater than one-half of the quota, one more member shall be chosen in the State.

But notwithstanding anything in this section, five members at least shall be chosen in each Original State.

25. For the purposes of the last section, if by the law of any State all persons of any race are disqualified from voting at elections for the more numerous House of the Parliament of the State, then, in reckoning the number of the people of the State or of the Commonwealth, persons of that race resident in that State shall not be counted.

26. Notwithstanding anything in section twenty-four, the number of members to be chosen in each State at the first election shall be as follows:—

New South Wales	23	South Australia	6
Victoria	20	Tasmania	5
Queensland	8		

Provided that if Western Australia is an Original State, the numbers shall be as follows:—

New South Wales	26	South Australia	7
Victoria	23	Western Australia	5
Queensland	9	Tasmania	5

27. Subject to this Constitution, the Parliament may make laws for increasing or diminishing the number of the members of the House of Representatives.

28. Every House of Representatives shall continue for three years from the first meeting of the House, and no longer, but may be sooner dissolved by the Governor-General.

29. Until the Parliament of the Commonwealth otherwise provides, the Parliament of any State may make laws for determining the divisions in each State for which members of the House of Representatives may be chosen, and the number of members to be chosen for each division. A division shall not be formed out of parts of different States.

In the absence of other provision, each State shall be one electorate.

30. Until the Parliament otherwise provides, the qualification of electors of members of the House of Representatives shall be in each State that which is prescribed by the law of the State as the qualification of electors of the more numerous House of Parliament of the State; but in the choosing of members each elector shall vote only once.

31. Until the Parliament otherwise provides, but subject to this Constitution, the laws in force in each State for the time being relating to elections for the more numerous House of the Parliament of the State shall, as nearly as practicable, apply to elections in the State of members of the House of Representatives.

32. The Governor-General in Council may cause writs to be issued for general elections of members of the House of Representatives.

After the first general election, the writs shall be issued within ten days from the expiry of a House of Representatives or from the proclamation of a dissolution thereof.

33. Whenever a vacancy happens in the House of Representatives, the Speaker shall issue his writ for the election of a new member, or if there is no Speaker, or if he is absent from the Commonwealth, the Governor-General in Council may issue the writ.

34. Until the Parliament otherwise provides, the qualifications of a member of the House of Representatives shall be as follows:—

(i.) He must be of the full age of twenty-one years, and must be an elector entitled to vote at the election of members of the House of Representatives, or a person qualified to become such elector, and must have been for three years at the least a resident within the limits of the Commonwealth as existing at the time when he is chosen:

(ii.) He must be a subject of the Queen, either natural-born or for at least five years naturalised under a law of the United Kingdom, or of a colony which has become or becomes a State, or of the Commonwealth, or of a State.

35. The House of Representatives shall, before proceeding to the despatch of any other business, choose a member to be the Speaker of the House, and as often as the office of Speaker becomes vacant the House shall again choose a member to be the Speaker.

The Speaker shall cease to hold his office if he ceases to be a member. He may be removed from office by a vote of the House, or he may resign his office or his seat by writing addressed to the Governor-General.

36. Before or during any absence of the Speaker, the House of Representatives may choose a member to perform his duties in his absence.

37. A member may by writing addressed to the Speaker, or to the Governor-General if there is no Speaker or if the Speaker is absent from the Commonwealth, resign his place, which thereupon shall become vacant.

38. The place of a member shall become vacant if for two consecutive months of any session of the Parliament he, without the permission of the House, fails to attend the House.

39. Until the Parliament otherwise provides, the presence of at least one-third of the whole number of the members of the House of Representatives shall be necessary to constitute a meeting of the House for the exercise of its powers.

40. Questions arising in the House of Representatives shall be determined by a majority of votes other than that of the Speaker. The Speaker shall not vote unless the numbers are equal, and then he shall have a casting vote.

PART IV.—BOTH HOUSES OF THE PARLIAMENT.

41. No adult person who has or acquires a right to vote at elections for the more numerous House of the Parliament of a State shall, while the right continues, be prevented by any law of the Commonwealth from voting at elections for either House of the Parliament of the Commonwealth.

42. Every senator and every member of the House of Representatives shall before taking his seat make and subscribe before the Governor-General, or some person authorised by him, an oath or affirmation of allegiance in the form set forth in the schedule to this Constitution.

43. A member of either House of the Parliament shall be incapable of being chosen or of sitting as a member of the other House.

44. Any person who—

(i.) Is under any acknowledgment of allegiance, obedience, or adherence to a foreign power, or is a subject or a citizen or entitled to the rights or privileges of a subject or a citizen of a foreign power: or

(ii.) Is attainted of treason, or has been convicted and is under sentence, or subject to be sentenced, for any offence punishable under the law of the Commonwealth or of the State by imprisonment for one year or longer: or

(iii.) Is an undischarged bankrupt or insolvent: or

(iv.) Holds any office of profit under the Crown, or any pension payable during the pleasure of the Crown out of any of the revenues of the Commonwealth: or

(v.) Has any direct or indirect pecuniary interest in any agreement with the Public Service of the Commonwealth otherwise than as a member and in common with the other members of an incorporated company consisting of more than twenty-five persons:

shall be incapable of being chosen or of sitting as a senator or a member of the House of Representatives.

But sub-section iv. does not apply to the office of any of the Queen's Ministers of State for the Commonwealth, or of any of the Queen's Ministers for a State, or to the receipt of pay, half-pay, or a pension by any person as an officer or member of the Queen's navy or army, or to the receipt of pay as an officer or member of the naval or military forces of the Commonwealth by any person whose services are not wholly employed by the Commonwealth.

45. If a senator or member of the House of Representatives—

(i.) Becomes subject to any of the disabilities mentioned in the last preceding section: or

(ii.) Takes the benefit, whether by assignment, composition, or otherwise, of any law relating to bankrupt or insolvent debtors: or (iii.) Directly or indirectly takes or agrees to take any fee or honorarium for services rendered to the Commonwealth, or for services rendered in the Parliament to any person or State:

his place shall thereupon become vacant.

46. Until the Parliament otherwise provides, any person declared by this Constitution to be incapable of sitting as a senator or as a member of the House of Representatives shall, for every day on which he so sits, be liable to pay the sum of one hundred pounds to any person who sues for it in any court of competent jurisdiction.

47. Until the Parliament otherwise provides, any question respecting the qualification of a senator or of a member of the House of Representatives, or respecting a vacancy in either House of the Parliament, and any question of a disputed election to either House, shall be determined by the House in which the question arises.

48. Until the Parliament otherwise provides, each senator and each member of the House of Representatives shall receive an allowance of four hundred pounds a year, to be reckoned from the day on which he takes his seat.

49. The powers, privileges, and immunities of the Senate and of the House of Representatives, and of the members and the committees of each House, shall be such as are declared by the Parliament, and until declared shall be those of the Commons House of Parliament of the United Kingdom, and of its members and committees, at the establishment of the Commonwealth.

50. Each House of the Parliament may make rules and orders with respect to—

(i.) The mode in which its powers, privileges, and immunities may be exercised and upheld:

(ii.) The order and conduct of its business and proceedings either separately or jointly with the other House.

PART V.—POWERS OF THE PARLIAMENT.

51. The Parliament shall, subject to this Constitution, have power to make laws for the peace, order, and good government of the Commonwealth with respect to:—

(i.) Trade and commerce with other countries, and among the States:

(ii.) Taxation; but so as not to discriminate between States or parts of States:

(iii.) Bounties on the production or export of goods, but so that such bounties shall be uniform throughout the Commonwealth:

(iv.) Borrowing money on the public credit of the Commonwealth:

(v.) Postal, telegraphic, telephonic, and other like services:

(vi.) The naval and military defence of the Commonwealth and of the several States, and the control of the forces to execute and maintain the laws of the Commonwealth:

(vii.) Lighthouses, lightships, beacons and buoys:

(viii.) Astronomical and meteorological observations:

(ix.) Quarantine:

(x.) Fisheries in Australian waters beyond territorial limits:

(xi.) Census and statistics:

(xii.) Currency, coinage, and legal tender:

(xiii.) Banking, other than State banking; also State banking extending beyond the limits of the State concerned, the incorporation of banks, and the issue of paper money:

(xiv.) Insurance, other than State insurance; also State insurance extending beyond the limits of the State concerned:

(xv.) Weights and measures:

(xvi.) Bills of exchange and promissory notes:

(xvii.) Bankruptcy and insolvency:

(xviii.) Copyrights, patents of inventions and designs, and trade marks:

(xix.) Naturalization and aliens:

(xx.) Foreign corporations, and trading or financial corporations formed within the limits of the Commonwealth:

(xxi.) Marriage:

(xxii.) Divorce and matrimonial causes; and in relation thereto, parental rights, and the custody and guardianship of infants:

(xxiii.) Invalid and old-age pensions:

(xxiv.) The service and execution throughout the Commonwealth of the civil and criminal process and the judgments of the Courts of the States:

(xxv.) The recognition throughout the Commonwealth of the laws, the public Acts and records, and the judicial proceedings of the States:

(xxvi.) The people of any race, other than the aboriginal race in any State, for whom it is deemed necessary to make special laws:

(xxvii.) Immigration and emigration:

(xxviii.) The influx of criminals:

(xxix.) External affairs:

(xxx.) The relations of the Commonwealth with the islands of the Pacific:

(xxxi.) The acquisition of property on just terms from any State or person for any purpose in respect of which the Parliament has power to make laws:

(xxxii.) The control of railways with respect to transport for the naval and military purposes of the Commonwealth:

(xxxiii.) The acquisition, with the consent of a State, of any railways of the State on terms arranged between the Commonwealth and the State:

(xxxiv.) Railway construction and extension in any State with the consent of that State:

(xxxv.) Conciliation and arbitration for the prevention and settlement of industrial disputes extending beyond the limits of any one State:

(xxxvi.) Matters in respect of which this Constitution makes provision until the Parliament otherwise provides:

(xxxvii.) Matters referred to the Parliament of the Commonwealth by the Parliament or Parliaments of any State or States, but so that the law shall extend only to States by whose Parliaments the matter is referred, or which afterwards adopt the law:

(xxxviii.) The exercise within the Commonwealth, at the request or with the concurrence of the Parliaments of all the States directly concerned, of any power which can at the establishment of this Constitution be exercised only by the Parliament of the United Kingdom or by the Federal Council of Australasia:

(xxxix.) Matters incidental to the execution of any power vested by this Constitution in the Parliament or in either House thereof, or in the Government of the Commonwealth, or in the Federal Judicature, or in any department or officer of the Commonwealth.

52. The Parliament shall, subject to this Constitution, have exclusive power to make laws for the peace, order, and good government of the Commonwealth with respect to—

(i.) The seat of Government of the Commonwealth, and all places acquired by the Commonwealth for public purposes:

(ii.) Matters relating to any department of the public service the control of which is by this Constitution transferred to the Executive Government of the Commonwealth:

(iii.) Other matters declared by this Constitution to be within the exclusive power of the Parliament.

53. Proposed laws appropriating revenue or moneys, or imposing taxation, shall not originate in the Senate. But a proposed law shall not be taken to appropriate revenue or moneys, or to impose taxation, by reason only of its containing provisions for the imposition or appropriation of fines or other pecuniary penalties, or for the demand or payment or appropriation of fees for licenses, or fees for services under the proposed law.

The Senate may not amend proposed laws imposing taxation, or proposed laws appropriating revenue or moneys for the ordinary annual services of the Government.

The Senate may not amend any proposed law so as to increase any proposed charge or burden on the people.

The Senate may at any stage return to the House of Representatives any proposed law which the Senate may not amend, requesting, by message, the omission or amendment of any items or provisions therein. And the House of Representatives may, if it thinks fit, make any of such omissions or amendments, with or without modifications.

Except as provided in this section, the Senate shall have equal power with the House of Representatives in respect of all proposed laws.

54. The proposed law which appropriates revenue or moneys for the ordinary annual services of the Government shall deal only with such appropriations.

55. Laws imposing taxation shall deal only with the imposition of taxation, and any provision therein dealing with any other matter shall be of no effect.

Laws imposing taxation, except laws imposing duties of customs or of excise, shall deal with one subject of taxation only; but laws imposing duties of customs shall deal with duties of customs only, and laws imposing duties of excise shall deal with duties of excise only.

56. A vote, resolution, or proposed law for the appropriation of revenue or moneys shall not be passed unless the purpose of the appropriation has in the same session been recommended by message of the Governor-General to the House in which the proposal originated.

57. If the House of Representatives passes any proposed law, and the Senate rejects or fails to pass it, or passes it with amendments to which the House of Representatives will not agree, and if after an interval of three months the House of Representatives, in the same or the next session, again passes the proposed law with or without any amendments which have been made, suggested or agreed to by the Senate, and the Senate rejects or fails to pass it, or passes it with amendments to which the House of Representatives will not agree, the Governor-General may dissolve the Senate and the House of Representatives simultaneously. But such dissolution shall not take place within six months before the date of the expiry of the House of Representatives by effluxion of time.

If after such dissolution the House of Representatives again passes the proposed law, with or without any amendments which have been made, suggested, or agreed to by the Senate, and the Senate rejects or fails to pass it, or passes it with amendments to which the House of Representatives will not agree, the Governor-General may convene a joint sitting of the members of the Senate and of the House of Representatives.

The members present at the joint sitting may deliberate and shall vote together upon the proposed law as last proposed by the House of Representatives, and upon amendments, if any, which have been made therein by one House and not agreed to by the other, and any such amendments which are affirmed by an absolute majority of the total number of the members of the Senate and House of Representatives shall be taken to have been carried, and if the proposed law, with the amendments, if any, so carried is affirmed by an absolute majority of the total number of members of the Senate and House of Representatives, it shall be taken to have been duly passed by both Houses of the Parliament, and shall be presented to the Governor-General for the Queen's assent.

58. When a proposed law passed by both Houses of the Parliament is presented to the Governor-General for the Queen's assent, he shall declare, according to his discretion, but subject to this Constitution, that he assents in the Queen's name, or that he withholds assent, or that he reserves the law for the Queen's pleasure.

The Governor-General may return to the House in which it originated any proposed law so presented to him, and may transmit therewith any amendments which he may recommend, and the Houses may deal with the recommendation.

59. The Queen may disallow any law within one year from the Governor-General's assent, and such disallowance on being made known by the Governor-General by speech or message to each of the Houses of the Parliament, or by Proclamation, shall annul the law from the day when the disallowance is so made known.

60. A proposed law reserved for the Queen's pleasure shall not have any force unless and until within two years from the day on which it was presented to the Governor-General for the Queen's assent the Governor-General makes known, by speech or message to each of the Houses of Parliament, or by Proclamation, that it has received the Queen's assent.

CHAPTER II.—THE EXECUTIVE GOVERNMENT.

61. The executive power of the Commonwealth is vested in the Queen and is exercisable by the Governor-General as the Queen's representative, and extends to the execution and maintenance of this Constitution, and of the laws of the Commonwealth.

62. There shall be a Federal Executive Council to advise the Governor-General in the government of the Commonwealth, and the members of the Council shall be chosen and summoned by the Governor-General and sworn as Executive Councillors, and shall hold office during his pleasure.

63. The provisions of this Constitution referring to the Governor-General in Council shall be construed as referring to the Governor-General acting with the advice of the Federal Executive Council.

64. The Governor-General may appoint officers to administer such departments of State of the Commonwealth as the Governor-General in Council may establish.

Such officers shall hold office during the pleasure of the Governor-General. They shall be members of the Federal Executive Council, and shall be the Queen's Ministers of State for the Commonwealth.

After the first general election no Minister of State shall hold office for a longer period than three months unless he is or becomes a senator or a member of the House of Representatives.

65. Until the Parliament otherwise provides, the Ministers of State shall not exceed seven in number, and shall hold such offices as the Parliament prescribes, or, in the absence of provision, as the Governor-General directs.

66. There shall be payable to the Queen, out of the Consolidated Revenue Fund of the Commonwealth, for the salaries of the Ministers of State, an annual sum which, until the Parliament otherwise provides, shall not exceed twelve thousand pounds a year.

67. Until the Parliament otherwise provides, the appointment and removal of all other officers of the Executive Government of the Commonwealth shall be vested in the Governor-General in Council, unless the appointment is delegated by the Governor-General in Council or by a law of the Commonwealth to some other authority.

68. The command in chief of the naval and military forces of the Commonwealth is vested in the Governor-General as the Queen's representative.

69. On a date or dates to be proclaimed by the Governor-General after the establishment of the Commonwealth the following departments of the public service in each State shall become transferred to the Commonwealth:—

Posts, telegraphs, and telephones:
Naval and military defence:
Lighthouses, lightships, beacons, and buoys:
Quarantine.

But the departments of customs and of excise in each State shall become transferred to the Commonwealth on its establishment.

70. In respect of matters which, under this Constitution, pass to the Executive Government of the Commonwealth, all powers and functions which at the establishment of the Commonwealth are vested in the Governor of a Colony, or in the Governor of a Colony with the advice of his Executive Council, or in any authority of a Colony, shall vest in the Governor-General, or in the Governor-General in Council, or in the authority exercising similar powers under the Commonwealth, as the case requires.

CHAPTER III.—THE JUDICATURE.

71. The judicial power of the Commonwealth shall be vested in a Federal Supreme Court, to be called the High Court of Australia, and in such other federal courts as the Parliament creates, and in such other courts as it invests with federal jurisdiction. The High Court shall consist of a Chief Justice, and so many other Justices, not less than two, as the Parliament prescribes.

72. The Justices of the High Court and of the other courts created by the Parliament—

(i.) Shall be appointed by the Governor-General in Council:

(ii.) Shall not be removed except by the Governor-General in Council, on an address from both Houses of the Parliament in the same session, praying for such removal on the ground of proved misbehaviour or incapacity:

(iii.) Shall receive such remuneration as the Parliament may fix; but the remuneration shall not be diminished during their continuance in office.

73. The High Court shall have jurisdiction, with such exceptions and subject to such regulations as the Parliament prescribes, to hear and determine appeals from all judgments, decrees, orders, and sentences—

(i.) Of any Justice or Justices exercising the original jurisdiction of the High Court:

(ii.) Of any other federal court, or court exercising federal jurisdiction; or of the Supreme Court of any State, or of any other court of any State from which at the establishment of the Commonwealth an appeal lies to the Queen in Council:

(iii.) Of the Interstate Commission, but as to questions of law only:

and the judgment of the High Court in all such cases shall be final and conclusive.

But no exception or regulation prescribed by the Parliament shall prevent the High Court from hearing and determining any appeal from the Supreme Court of a State in any matter in which at the establishment of the Commonwealth an appeal lies from such Supreme Court to the Queen in Council.

Until the Parliament otherwise provides, the conditions of and restrictions on appeals to the Queen in Council from the Supreme Courts of the several States shall be applicable to appeals from them to the High Court.

74. No appeal shall be permitted to the Queen in Council from a decision of the High Court upon any question, howsoever arising, as to the limits *inter se* of the Constitutional powers of the Commonwealth and those of any State or States, or as to the limits *inter se* of the Constitutional powers of any two or more States, unless the High Court shall certify that the question is one which ought to be determined by Her Majesty in Council.

The High Court may so certify if satisfied that for any special reason the certificate should be granted, and thereupon an appeal shall lie to Her Majesty in Council on the question without further leave.

Except as provided in this section, this Constitution shall not impair any right which the Queen may be pleased to exercise by virtue of Her Royal prerogative to grant special leave of appeal from the High Court to Her Majesty in Council. The Parliament may make laws limiting the matters in which such leave may be asked, but proposed laws containing any such limitation shall be reserved by the Governor-General for Her Majesty's pleasure.

75. In all matters—

(i.) Arising under any treaty:

(ii.) Affecting consuls or other representatives of other countries:

(iii.) In which the Commonwealth, or a person suing or being sued on behalf of the Commonwealth, is a party:

(iv.) Between States, or between residents of different States, or between a State and a resident of another State:

(v.) In which a writ of Mandamus or prohibition or an injunction is sought against an officer of the Commonwealth:

the High Court shall have original jurisdiction.

76. The Parliament may make laws conferring original jurisdiction on the High Court in any matter—

(i.) Arising under this Constitution, or involving its interpretation:

(ii.) Arising under any laws made by the Parliament:

(iii.) Of Admiralty and maritime jurisdiction:

(iv.) Relating to the same subject-matter claimed under the laws of different States.

77. With respect to any of the matters mentioned in the last two sections the Parliament may make laws—

(i.) Defining the jurisdiction of any federal court other than the High Court:

(ii.) Defining the extent to which the jurisdiction of any federal court shall be exclusive of that which belongs to or is invested in the courts of the States:

(iii.) Investing any court of a State with federal jurisdiction.

78. The Parliament may make laws conferring rights to proceed against the Commonwealth or a State in respect of matters within the limits of the judicial power.

79. The federal jurisdiction of any court may be exercised by such number of judges as the Parliament prescribes.

80. The trial on indictment of any offence against any law of the Commonwealth shall be by jury, and every such trial shall be held in the State where the offence was committed, and if the offence was not committed within any State the trial shall be held at such place or places as the Parliament prescribes.

CHAPTER IV.—FINANCE AND TRADE.

81. All revenues or moneys raised or received by the Executive Government of the Commonwealth shall form one Consolidated Revenue Fund, to be appropriated for the purposes of the Commonwealth in the manner and subject to the charges and liabilities imposed by this Constitution.

82. The costs, charges, and expenses incident to the collection, management, and receipt of the Consolidated Revenue Fund shall form the first charge thereon; and the revenue of the Commonwealth shall in the first instance be applied to the payment of the expenditure of the Commonwealth.

83. No money shall be drawn from the Treasury of the Commonwealth except under appropriation made by law.

But until the expiration of one month after the first meeting of the Parliament the Governor-General in Council may draw from the Treasury and expend such moneys as may be necessary for the maintenance of any department transferred to the Commonwealth and for the holding of the first elections for the Parliament.

84. When any department of the public service of a State becomes transferred to the Commonwealth, all officers of the department shall become subject to the control of the Executive Government of the Commonwealth.

Any such officer who is not retained in the service of the Commonwealth shall, unless he is appointed to some other office of equal emolument in the public service of the State, be entited to receive from the State any pension, gratuity, or other compensation, payable under the law of the State on the abolition of his office.

Any such officer who is retained in the service of the Commonwealth shall preserve all his existing and accruing rights, and shall be entitled to retire from office at the time, and on the pension or retiring allowance, which would be permitted by the law of the State if his service with the Commonwealth were a continuation of his service with the State. Such pension or retiring allowance shall be paid to him by the Commonwealth; but the State shall pay to the Commonwealth a part thereof, to be calculated on the proportion which his term of service with the State bears to his whole term of service, and for the purpose of the calculation his salary shall be taken to be that paid to him by the State at the time of the transfer.

Any officer who is, at the establishment of the Commonwealth, in the public service of the State, and who is, by consent of the Governor of the State with the advice of the Executive Council thereof, transferred to the public service of the Commonwealth, shall have the same rights as if he had been an officer of a department transferred to the Commonwealth and were retained in the service of the Commonwealth.

85. When any department of the public service of a State is transferred to the Commonwealth—

(i.) All property of the State of any kind, used exclusively in connexion with the department, shall become vested in the Commonwealth; but, in the case of the departments controlling customs and excise and bounties, for such time only as the Governor-General in Council may declare to be necessary:

(ii.) The Commonwealth may acquire any property of the State, of any kind used, but not exclusively used in connexion with the department; the value thereof shall, if no agreement can be made, be ascertained in, as nearly as may be, the manner in which the value of land, or of an interest in land, taken by the State for public purposes is ascertained under the law of the State in force at the establishment of the Commonwealth:

(iii.) The Commonwealth shall compensate the State for the value of any property passing to the Commonwealth under this section: if no agreement can be made as to the mode of compensation, it shall be determined under laws to be made by the Parliament:

(iv.) The Commonwealth shall, at the date of the transfer, assume the current obligations of the State in respect of the department transferred.

86. On the establishment of the Commonwealth, the collection and control of duties of customs and of excise, and the control of the payment of bounties, shall pass to the Executive Government of the Commonwealth.

87. During a period of ten years after the establishment of the Commonwealth and thereafter until the Parliament otherwise provides, of the net revenue of the Commonwealth from duties of customs and of excise not more than one-fourth shall be applied annually by the Commonwealth towards its expenditure.

The balance shall, in accordance with this Constitution, be paid to the several States, or applied to the payment of interest on debts of the several States taken over by the Commonwealth.

88. Uniform duties of customs shall be imposed within two years after the establishment of the Commonwealth.

89. Until the imposition of uniform duties of customs—

(i.) The Commonwealth shall credit to each State the revenues collected therein by the Commonwealth.

(ii.) The Commonwealth shall debit to each State—

(a) The expenditure therein of the Commonwealth incurred solely for the maintenance or continuance, as at the time of transfer, of any department transferred from the State to the Commonwealth;

(b) The proportion of the State, according to the number of its people, in the other expenditure of the Commonwealth.

(iii.) The Commonwealth shall pay to each State month by month the balance (if any) in favour of the State.

90. On the imposition of uniform duties of customs the power of the Parliament to impose duties of customs and of excise, and to grant bounties on the production or export of goods, shall become exclusive.

On the imposition of uniform duties of customs all laws of the several States imposing duties of customs or of excise, or offering bounties on the production or export of goods, shall cease to have effect, but any grant of or agreement for any such bounty lawfully made by or under the authority of the Government of any State shall be taken to be good if made before the thirtieth day of June, one thousand eight hundred and ninety-eight, and not otherwise.

91. Nothing in this Constitution prohibits a State from granting any aid to or bounty on mining for gold, silver, or other metals, nor from granting, with the consent of both Houses of the Parliament of the Commonwealth expressed by resolution, any aid to or bounty on the production or export of goods.

92. On the imposition of uniform duties of customs, trade, commerce, and intercourse among the States, whether by means of internal carriage or ocean navigation, shall be absolutely free.

But notwithstanding anything in this Constitution, goods imported before the imposition of uniform duties of customs into any State, or into any Colony which, whilst the goods remain therein, becomes a State, shall, on thence passing into another State within two years after the imposition of such duties, be liable to any duty chargeable on the importation of such goods into the Commonwealth, less any duty paid in respect of the goods on their importation.

93. During the first five years after the imposition of uniform duties of customs, and thereafter until the Parliament otherwise provides—

(i.) The duties of customs chargeable on goods imported into a State and afterwards passing into another State for consumption, and the duties of excise paid on goods produced or manufactured in a State and afterwards passing into another State for consumption, shall be taken to have been collected not in the former but in the latter State:

(ii.) Subject to the last sub-section, the Commonwealth shall credit revenue, debit expenditure, and pay balances to the several States as prescribed for the period preceding the imposition of uniform duties of customs.

94. After five years from the imposition of uniform duties of customs, the Parliament may provide, on such basis as it deems fair, for the monthly payment to the several States of all surplus revenue of the Commonwealth.

95. Notwithstanding anything in this Constitution, the Parliament of the State of Western Australia, if that State be an original State, may, during the first five years after the imposition of uniform duties of customs, impose duties of customs on goods passing into that State and not originally imported from beyond the limits of the Commonwealth; and such duties shall be collected by the Commonwealth.

But any duty so imposed on any goods shall not exceed during the first of such years the duty chargeable on the goods under the law of Western Australia in force at the imposition of uniform duties, and shall not exceed during the second, third, fourth, and fifth of such years respectively, four-fifths, three-fifths, two-fifths, and one-fifth of such latter duty, and all duties imposed under this section shall cease at the expiration of the fifth year after the imposition of uniform duties.

If at any time during the five years the duty on any goods under this section is higher than the duty imposed by the Commonwealth on the importation of the like goods, then such higher duty shall be collected on the goods when imported into Western Australia from beyond the limits of the Commonwealth.

96. During a period of ten years after the establishment of the Commonwealth and thereafter until the Parliament otherwise provides, the Parliament may grant financial assistance to any State on such terms and conditions as the Parliament thinks fit.

97. Until the Parliament otherwise provides, the laws in force in any Colony which has become or becomes a State with respect to the receipt of revenue and the expenditure of money on account of the Government of the Colony, and the review and audit of such receipt and expenditure, shall apply to the receipt of revenue and the expenditure of money on account of the Commonwealth in the State in the same manner as if the Commonwealth, or the Government or an officer of the Commonwealth, were mentioned whenever the Colony, or the Government or an officer of the Colony, is mentioned.

98. The power of the Parliament to make laws with respect to trade and commerce extends to navigation and shipping, and to railways the property of any State.

99. The Commonwealth shall not, by any law or regulation of trade, commerce, or revenue, give preference to one State or any part thereof over another State or any part thereof.

100. The Commonwealth shall not, by any law or regulation of trade or commerce, abridge the right of a State or of the residents therein to the reasonable use of the waters of rivers for conservation or irrigation.

101. There shall be an Interstate Commission, with such powers of adjudication and administration as the Parliament deems necessary for the execution and maintenance, within the Commonwealth, of the provisions of this Constitution relating to trade and commerce, and of all laws made thereunder.

102. The Parliament may by any law with respect to trade or commerce forbid, as to railways, any preference or discrimination by any State, or by any authority constituted under a State, if such preference or discrimination is undue and unreasonable, or unjust to any State; due regard being had to the financial responsibilities incurred by any State in connexion with the construction and maintenance of its railways. But no preference or discrimination shall, within the meaning of this section, be taken to be undue and unreasonable, or unjust to any State, unless so adjudged by the Interstate Commission.

103. The members of the Interstate Commission—

(i.) Shall be appointed by the Governor-General in Council :

(ii.) Shall hold office for seven years, but may be removed within that time by the Governor-General in Council, on an address from both Houses of the Parliament in the same session praying for such removal on the ground of proved misbehaviour or incapacity :

(iii.) Shall receive such remuneration as the Parliament may fix; but such remuneration shall not be diminished during their continuance in office.

104. Nothing in this Constitution shall render unlawful any rate for carriage of goods upon a railway, the property of a State, if the rate is deemed by the Interstate Commission to be necessary for the development of the territory of the State, and if the rate applies equally to goods within the State and to goods passing into the State from other States.

105. The Parliament may take over from the States their public debts as existing at the establishment of the Commonwealth, or a proportion thereof according to the respective numbers of their people as shown by the latest statistics of the Commonwealth, and may convert, renew, or consolidate such debts, or any part thereof; and the States shall indemnify the Commonwealth in respect of the debts taken over, and thereafter the interest payable in respect of the debts shall be deducted and retained from the portions of the surplus revenue of the Commonwealth payable to the several States, or if such surplus is insufficient, or if there is no surplus, then the deficiency or the whole amount shall be paid by the several States.

CHAPTER V.—THE STATES.

106. The Constitution of each State of the Commonwealth shall, subject to this Constitution, continue as at the establishment of the Commonwealth, or as at the admission or establishment of the State, as the case may be, until altered in accordance with the Constitution of the State.

107. Every power of the Parliament of a Colony which has become or becomes a State, shall, unless it is by this Constitution exclusively vested in the Parliament of the Commonwealth or withdrawn from the Parliament of the State, continue as at the establishment of the Commonwealth, or as at the admission or establishment of the State, as the case may be.

108. Every law in force in a Colony which has become or becomes a State, and relating to any matter within the powers of the Parliament of the Commonwealth, shall, subject to this Constitution, continue in force in the State: and, until provision is made in that behalf by the Parliament of the Commonwealth, the Parliament of the State shall have such powers of alteration and of repeal in respect of any such law as the Parliament of the Colony had until the Colony became a State.

109. When a law of a State is inconsistent with a law of the Commonwealth, the latter shall prevail, and the former shall, to the extent of the inconsistency, be invalid.

110. The provisions of this Constitution relating to the Governor of a State extend and apply to the Governor for the time being of the State, or other chief executive officer or administrator of the Government of the State.

111. The Parliament of a State may surrender any part of the State to the Commonwealth; and upon such surrender, and the acceptance thereof by the Commonwealth, such part of the State shall become subject to the exclusive jurisdiction of the Commonwealth.

112. After uniform duties of customs have been imposed, a State may levy on imports or exports, or on goods passing into or out of the State, such charges as may be necessary for executing the inspection laws of the State; but the net produce of all charges so levied shall be for the use of the Commonwealth; and any such inspection laws may be annulled by the Parliament of the Commonwealth.

113. All fermented, distilled, or other intoxicating liquids passing into any State or remaining therein for use, consumption, sale, or storage, shall be subject to the laws of the State as if such liquids had been produced in the State.

114. A State shall not, without the consent of the Parliament of the Commonwealth, raise or maintain any naval or military force, or impose any tax on property of any kind belonging to the Commonwealth, nor shall the Commonwealth impose any tax on property of any kind belonging to a State.

115. A State shall not coin money, nor make anything but gold and silver coin a legal tender in payment of debts.

116. The Commonwealth shall not make any law for establishing any religion, or for imposing any religious observance, or for prohibiting the free exercise of any religion, and no religious test shall be required as a qualification for any office or public trust under the Commonwealth.

117. A subject of the Queen, resident in any State, shall not be subject in any other State to any disability or discrimination which would not be equally applicable to him if he were a subject of the Queen resident in such other State.

118. Full faith and credit shall be given, throughout the Commonwealth, to the laws, the public Acts and records, and the judicial proceedings of every State.

119. The Commonwealth shall protect every State against invasion and, on the application of the Executive Government of the State, against domestic violence.

120. Every State shall make provision for the detention in its prisons of persons accused or convicted of offences against the laws of the Commonwealth, and for the punishment of persons convicted of such offences, and the Parliament of the Commonwealth may make laws to give effect to this provision.

CHAPTER VI.—NEW STATES.

121. The Parliament may admit to the Commonwealth or establish new States, and may upon such admission or establishment make or impose such terms and conditions, including the extent of representation in either House of the Parliament, as it thinks fit.

122. The Parliament may make laws for the government of any territory surrendered by any State to and accepted by the Commonwealth, or of any territory placed by the Queen under the authority of and accepted by the Commonwealth, or otherwise acquired by the Commonwealth, and may allow the representation of such territory in either House of the Parliament to the extent and on the terms which it thinks fit.

123. The Parliament of the Commonwealth may, with the consent of the Parliament of a State, and the approval of the majority of the electors of the State voting upon the question, increase, diminish, or otherwise alter the limits of the State, upon such terms and conditions as may be agreed on, and may, with the like consent, make provision respecting the effect and operation of any increase or diminution or alteration of territory in relation to any State affected.

124. A new State may be formed by separation of territory from a State, but only with the consent of the Parliament thereof, and a new State may be formed by the union of two or more States or parts of States, but only with the consent of the Parliaments of the States affected.

CHAPTER VII.—MISCELLANEOUS.

125. The seat of Government of the Commonwealth shall be determined by the Parliament, and shall be within territory which shall have been granted to or acquired by the Commonwealth, and shall be vested in and belong to the Commonwealth, and shall be in the State of New South Wales, and be distant not less than one hundred miles from Sydney.

Such territory shall contain an area of not less than one hundred square miles, and such portion thereof as shall consist of Crown lands shall be granted to the Commonwealth without any payment therefor.

The Parliament shall sit at Melbourne until it meet at the seat of Government.

126. The Queen may authorise the Governor-General to appoint any person, or any persons jointly or severally, to be his deputy or deputies within any part of the Common-

wealth, and in that capacity to exercise during the pleasure of the Governor-General such powers and functions of the Governor-General as he thinks fit to assign to such deputy or deputies, subject to any limitations expressed or directions given by the Queen; but the appointment of such deputy or deputies shall not affect the exercise by the Governor-General himself of any power or function.

127. In reckoning the numbers of the people of the Commonwealth, or of a State or other part of the Commonwealth, aboriginal natives shall not be counted.

CHAPTER VIII.—ALTERATION OF THE CONSTITUTION.

128. This Constitution shall not be altered except in the following manner:—

The proposed law for the alteration thereof must be passed by an absolute majority of each House of the Parliament, and not less than two nor more than six months after its passage through both Houses the proposed law shall be submitted in each State to the electors qualified to vote for the election of members of the House of Representatives.

But if either House passes any such proposed law by an absolute majority, and the other House rejects or fails to pass it or passes it with any amendment to which the first-mentioned House will not agree, and if after an interval of three months the first-mentioned House in the same or the next session again passes the proposed law by an absolute majority with or without any amendment which has been made or agreed to by the other House, and such other House rejects or fails to pass it or passes it with any amendment to which the first-mentioned House will not agree, the Governor-General may submit the proposed law as last proposed by the first-mentioned House, and either with or without any amendments subsequently agreed to by both Houses, to the electors in each State qualified to vote for the election of the House of Representatives.

When a proposed law is submitted to the electors the vote shall be taken in such manner as the Parliament prescribes. But until the qualification of electors of members of the House of Representatives becomes uniform throughout the Commonwealth, only one-half the electors voting for and against the proposed law shall be counted in any State in which adult suffrage prevails.

And if in a majority of the States a majority of the electors voting approve the proposed law, and if a majority of all the electors voting also approve the proposed law, it shall be presented to the Governor-General for the Queen's assent.

No alteration diminishing the proportionate representation of any State in either House of the Parliament, or the minimum number of representatives of a State in the House of Representatives, or increasing, diminishing, or otherwise altering the limits of the State, or in any manner affecting the provisions of the Constitution in relation thereto, shall become law unless the majority of the electors voting in that State approve the proposed law.

SCHEDULE.

OATH.

I, *A.B.*, do swear that I will be faithful and bear true allegiance to Her Majesty Queen Victoria, Her heirs and successors according to law. SO HELP ME GOD!

AFFIRMATION.

I, *A.B.*, do solemnly and sincerely affirm and declare that I will be faithful and bear true allegiance to Her Majesty Queen Victoria, Her heirs and successors according to law.

(NOTE.—*The name of the King or Queen of the United Kingdom of Great Britain and Ireland for the time being is to be substituted from time to time.*)

2. The Royal Proclamation.—The preceding Act received the Royal Assent on 9th July, 1900. This made it lawful (see Sec. 3) to declare that the people of Australia should be united in a Federal Commonwealth. This proclamation, made on the 17th September, 1900, constituted the Commonwealth as from the 1st January, 1901 : it reads as follows:—

BY THE QUEEN.

A PROCLAMATION.

(Signed) VICTORIA R.

WHEREAS by an Act of Parliament passed in the Sixty-third and Sixty-fourth Years of Our Reign intituled, "An Act to constitute the Commonwealth of *Australia*," it is enacted that it shall be lawful for the Queen, with the advice of the Privy Council, to declare by Proclamation, that, on and after a day therein appointed, not being later than One Year after the passing of this Act, the people of *New South Wales*, *Victoria*, *South Australia*, *Queensland*, *and Tasmania*, and also, if Her Majesty is satisfied that the people of *Western Australia* have agreed thereto, of *Western Australia*, shall be united in a Federal Commonwealth under the name of the Commonwealth of Australia.

And whereas We are satisfied that the people of *Western Australia* have agreed thereto accordingly.

We therefore, by and with the advice of Our Privy Council, have thought fit to issue this Our Royal Proclamation, and We do hereby declare that on and after the First day of *January* One thousand nine hundred and one, the people of *New South Wales*, *Victoria*, *South Australia*, *Queensland*, *Tasmania*, and *Western Australia* shall be united in a Federal Commonwealth under the name of the Commonwealth of *Australia*.

Given at Our Court at *Balmoral* this Seventeenth day of *September*, in the Year of Our Lord One thousand nine hundred, and in the Sixty-fourth Year of Our Reign.

GOD SAVE THE QUEEN.

§ 3. Commonwealth Legislation.

1. The Commonwealth Parliaments.—The first Parliament of the Commonwealth was convened by proclamation dated 29th April, 1901, by His Excellency the Rt. Hon. the Earl of Hopetoun, P.C., K.T., G.C.M.G., G.C.V.O., Governor-General. It was opened on 9th May, by H.R.H. the Duke of Cornwall and York, K.G., K.T., K.P., G.C.V.O., who had been sent to Australia for that purpose by His Majesty the King; the Rt. Hon. Sir Edmund Barton, P.C., G.C.M.G., K.C., being Prime Minister. It was dissolved 23rd November, 1903. The second Parliament was convened on 2nd March, 1904, by His Excellency the Rt. Hon. Baron Northcote, G.C.M.G., G.C.I.E., C.B.; the Hon. Alfred Deakin being Prime Minister. The third session closed on 12th October, 1906, and Parliament was dissolved on 8th November, 1906. The third Parliament was convened on the 20th February, 1907, and met on that day and the following day only. It was prorogued on 22nd February, the prorogation eventually extending to 13th July, 1907, on which day the second session commenced. The Debates of these Parliaments will be found in Volumes I. to XXXV., of the Parliamentary Debates, as follows:—

First Parliament,	1st Session	Vols.	I. to	XII., pp.	1 to	16,744.
,, ,,	2nd Session	,,	XIII. ,,	XVII., ,,	1 ,,	6,440.
Second Parliament,	1st Session	,,	XVIII. ,,	XXIV., ,,	1 ,,	8,618.
,, ,,	2nd Session	,,	XXV. ,,	XXX., ,,	1 ,,	7,461.
,, ,,	3rd Session	,,	XXXI. ,,	XXXV., ,,	1 ,,	6,491.
Third Parliament,	1st and 2nd Sessions	,,	XXXVI.			

2. **The Several Administrations.**—The following tabular statements shew the names of the several Governors-General, and the constitution of the Ministries which have directed the administration of the affairs of the Commonwealth since its creation:—

(a) GOVERNORS-GENERAL.

Rt. Hon. EARL OF HOPETOUN, P.C., K.T., G.C.M.G. G.C.V.O. Sworn 1st. January, 1901; recalled 9th May, 1902. left Melbourne 2nd July, 1902.

Rt. Hon. HALLAM BARON TENNYSON, G.C.M.G. (Act. Governor-General). Sworn 17th July, 1902.

Rt. Hon. HALLAM BARON TENNYSON, G.C.M.G. (Governor-General). Sworn 9th January, 1903; recalled 21st January, 1904.

Rt. Hon. HENRY STAFFORD, BARON NORTHCOTE, G.C.M.G., G.C.I.E., C.B. Sworn 21st January, 1904.

(b) BARTON ADMINISTRATION. 1st January, 1901, to 24th September, 1903.

DEPARTMENTS.	MINISTERS.
External Affairs	Rt. Hon. SIR EDMUND BARTON, P.C., G.C.M.G., K.C.
Attorney-General	Hon. ALFRED DEAKIN.
Home Affairs	Hon. SIR WILLIAM JOHN LYNE, K.C.M.G. (to 11/8/'03). Rt. Hon. SIR JOHN FORREST, P.C., G.C.M.G. (from 11/8/'03).
Treasury	Rt. Hon. SIR GEORGE TURNER, P.C., K.C.M.G.
Trade and Customs	Rt. Hon. CHARLES CAMERON KINGSTON, P.C., K.C. (resigned 24/7/'03) Hon. SIR WILLIAM JOHN LYNE, K.C.M.G., (from 11/8/'03).
Defence	Rt. Hon. SIR JOHN FORREST, P.C., G.C.M.G. (to 10/8/'03). Hon. JAMES GEORGE DRAKE (from 10/8/'03).
Postmaster-General	Hon. JAMES GEORGE DRAKE (to 10/8/'03). Hon. SIR PHILIP OAKLEY FYSH, K.C.M.G. (from 10/8/'03).
Vice-President Executive Council	Hon. RICHARD EDWARD O'CONNOR, K.C.
Without Portfolio	Hon. SIR PHILIP OAKLEY FYSH, K.C.M.G. (till 9/8/'03).

(c) DEAKIN ADMINISTRATION, 24th September, 1903, to 26th April, 1904

DEPARTMENTS.	MINISTERS.
External Affairs	Hon. ALFRED DEAKIN.
Trade and Customs	Hon. SIR WILLIAM JOHN LYNE, K.C.M.G.
Treasury	Rt. Hon. SIR GEORGE TURNER, P.C., K.C.M.G.
Home Affairs	Rt. Hon. SIR JOHN FORREST, P.C., G.C.M.G.
Attorney-General	Hon. JAMES GEORGE DRAKE.
Postmaster-General	Hon. SIR PHILIP OAKLEY FYSH, K.C.M.G.
Defence	Hon. AUSTIN CHAPMAN.
Vice-President Executive Council	Hon. THOMAS PLAYFORD.

(d) WATSON ADMINISTRATION, 27th April to 17th August, 1904.

DEPARTMENTS.	MINISTERS.
Treasurer	Hon. JOHN CHRISTIAN WATSON.
External Affairs	Hon. WILLIAM MORRIS HUGHES.
Attorney-General	Hon. HENRY BOURNES HIGGINS, K.C.
Home Affairs	Hon. EGERTON LEE BACHELOR.
Trade and Customs	Hon. ANDREW FISHER.
Defence	Hon. ANDERSON DAWSON.
Postmaster-General	Hon. HUGH MAHON.
Vice-President Executive Council	Hon. GREGOR McGREGOR.

(e) REID-McLEAN ADMINISTRATION, 18th August, 1904, to 5th July, 1905.

DEPARTMENTS.	MINISTERS.
External Affairs	Rt. Hon. GEORGE HOUSTON REID, P.C., K.C.
Trade and Customs	Hon. ALLAN McLEAN.
Attorney-General	Hon. SIR JOSIAH HENRY SYMON, K.C.M.G., K.C.
Treasury	Rt. Hon. SIR GEORGE TURNER, P.C., K.C.M.G.
Home Affairs	Hon. DUGALD THOMPSON.
Defence	Hon. JAMES WHITESIDE McKAY.
Postmaster-General	Hon. SYDNEY SMITH.
Vice-President Executive Council	Hon. JAMES GEORGE DRAKE.

(f) SECOND DEAKIN ADMINISTRATION, 5th July, 1905.

DEPARTMENTS.	MINISTERS.
External Affairs	Hon. ALFRED DEAKIN. Rt. Hon. SIR JOHN FORREST, P.C., G.C.M.G. (acting from 12/3/'07). Hon. SIR WILLIAM JOHN LYNE, K.C.M.G. (acting from 10/7/'07).
Attorney-General	Hon. ISAAC ALFRED ISAACS, K.C. (to 12/10/'06) Hon. LITTLETON ERNEST GROOM (from 13/10/'06).
Trade and Customs	Hon. SIR WILLIAM JOHN LYNE, K.C.M.G. (to 30/7/'07). Hon. AUSTIN CHAPMAN. (from 30/7/'07).
Treasurer	Rt. Hon. SIR JOHN FORREST, P.C., G.C.M.G. (to 30/7/'07). Hon. SIR WILLIAM JOHN LYNE (from 30/7/'07).
Postmaster-General	Hon. AUSTIN CHAPMAN (to 30/7/'07). Hon. SAMUEL MAUGER (from 30/7/'07).
Defence	Hon. THOMAS PLAYFORD (to 24/1/'07). Hon. THOMAS THOMSON EWING (from 24/1/'07).
Home Affairs	Hon. LITTLETON ERNEST GROOM (to 13/10/'06). Hon. THOMAS THOMSON EWING (from 13/10/'06 to 24/1/'07). Hon. JOHN HENRY KEATING (from 24/1/'07).
Vice-President Executive C'ncil	Hon. THOMAS THOMSON EWING (to 13/10/'06). Hon. JOHN HENRY KEATING (from 13/10/'06 to 20/2/'07). Hon. ROBERT WALLACE BEST (from 20/2/'07).

3. **The Course of Legislation.**—The actual legislation by the Commonwealth Parliament is indicated in alphabetical order on pp. ix. and x. of "Vol. V. of the Acts of the Parliament of the Commonwealth of Australia, passed in the session of 1906, with Tables, Appendixes and Indexes." A "Chronological Table of Acts passed from 1901 to 1906, shewing how they are affected by subsequent legislation or lapse of time" is also given. see pp. xiii. to xvii., and further "A Table of Commonwealth Legislation," for the same period, "in relation to the several provisions of the Constitution," is furnished on pp. xix. to xxvi. Reference may be made to these for complete information. The nature of this legislation, however, and its relation to the several provisions of the Constitution of the Commonwealth are set forth in the following, specially prepared, tabular statement[1]:—

(a) ANALYTIC TABLE OF COMMONWEALTH LEGISLATION FROM 1901 TO 1906 IN RELATION TO THE SEVERAL PROVISIONS OF THE CONSTITUTION.

Section of Constitution.	Short Title of Commonwealth Act.
	PARLIAMENTARY AND ELECTORAL LAW.
8—30	PARLIAMENTARY FRANCHISE. Commonwealth Franchise Act 1902.
9—34	ELECTIONS. Commonwealth Electoral Acts 1902-1906. Senate Elections Act 1903.
24	DETERMINATION OF NUMBER OF MEMBERS OF HOUSE OF REPRESENTATIVES. Representation Act 1905.
47	DISPUTED ELECTIONS AND RETURNS. Commonwealth Electoral Acts 1902-1906.
48	ALLOWANCES TO MEMBERS. Parliamentary Allowances Act 1902.
	GENERAL LEGISLATION.
51 (i.)	TRADE AND COMMERCE—EXTERNAL AND INTERSTATE. Sea Carriage of Goods Act 1904 (*Bills of Lading*). Secret Commissions Act 1905. Commerce (Trade Descriptions) Act 1905 (*Merchandise Marks*). Australian Industries Preservation Act 1905 (*Trusts and Dumping*).

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[1] This Table has been specially prepared by the Secretary of the Attorney-General's Department, Robert Randolph Garran, M.A., C.M.G., Barrister-at Law, etc.

Section of Constitution.	Short Title of Commonwealth Act.
(ii.)	TAXATION. Customs Act 1901 (*Machinery*). Beer Excise Act 1901 ,, Distillation Act 1901 ,, Excise Act 1901 ,, Spirits Act 1906 ,, Excise Tariff 1902 ; *amended by* Sugar Rebate Abolition Act 1903, Excise Tariff 1905, and Excise Tariff (Amendment) 1906. Excise Tariff 1906 (*Agricultural Machinery*). Excise Tariff 1906 (*Spirits*). Customs Tariff 1902. Customs Tariff 1906 (*Agricultural Machinery*). Customs Tariff (South African Preference) 1906.
(iii.)	BOUNTIES ON PRODUCTION OR EXPORT— Sugar Bounty Act 1903. Sugar Bounty Act 1906.
(v.)	POSTAL, TELEGRAPHIC, AND TELEPHONIC SERVICES— Post and Telegraph Act 1901. Wireless Telegraphy Act 1905. Post and Telegraph Rates Act 1902. Tasmanian Cable Rates Act 1906.
(vi.)	NAVAL AND MILITARY DEFENCE— Naval Agreement Act 1903. Defence Acts 1903-1904.
(viii.)	ASTRONOMICAL AND METEOROLOGICAL OBSERVATIONS— Meteorology Act 1906.
(xi.)	CENSUS AND STATISTICS— Census and Statistics Act 1905.
(xiv.)	INSURANCE— Life Assurance Companies Act 1905.
(xviii.)	COPYRIGHT, PATENTS, DESIGNS, AND TRADE MARKS— Patents Act 1903. Patents Act 1906. Trade Marks Act 1905. Copyright Act 1905. Designs Act 1906.
(xix.)	NATURALIZATION AND ALIENS— Naturalization Act 1903.
(xx.)	CORPORATIONS—FOREIGN, TRADING, AND FINANCIAL— Australian Industries Preservation Act 1906.
(xxiv.)	SERVICE AND EXECUTION THROUGHOUT COMMONWEALTH OF PROCESS AND JUDGMENTS OF STATE COURTS— Service and Execution of Process Acts 1901-1905.
(xxv.)	RECOGNITION OF STATE LAWS, RECORDS, ETC.— State Laws and Records Recognition Act 1901.
(xxvi.)	PEOPLE OF ANY RACE, OTHER THAN ABORIGINAL—SPECIAL LAWS— Pacific Island Labourers Act 1901-1906. Commonwealth Franchise Act 1902 (s. 4). Naturalization Act 1903 (s. 5).
(xxvii.)	IMMIGRATION AND EMIGRATION— Immigration Restriction Acts 1901-1905. Pacific Island Labourers Act 1901-1906. Contract Immigrants Act 1905.
(xxix.)	EXTERNAL AFFAIRS— Extradition Act 1903.
(xxx.)	RELATIONS WITH PACIFIC ISLANDS— Pacific Island Labourers Act 1901-1906.

Section of Constitution.	Short Title of Commonwealth Act.
(xxxi.)	ACQUISITION OF PROPERTY FOR PUBLIC PURPOSES— Seat of Government Act 1904. Lands Acquisition Act 1906.
(xxxii.)	CONTROL OF RAILWAYS FOR DEFENCE PURPOSES— Defence Act 1903 (ss. 64-66, 80, 120).
(xxxv.)	CONCILIATION AND ARBITRATION FOR THE PREVENTION AND SETTLEMENT OF INDUSTRIAL DISPUTES EXTENDING BEYOND THE LIMITS OF ANY ONE STATE— Commonwealth Conciliation and Arbitration Act 1904.
(xxxix.)	MATTERS INCIDENTAL TO THE EXECUTION OF POWERS— Acts Interpretation Act 1901. Acts Interpretation Act 1904. Amendments Incorporation Act 1905. Rules Publication Act 1903. Commonwealth Public Service Act 1902, *amended by* Commonwealth Public Service Amendment Act 1903. Jury Exemption Act 1905. Royal Commissions Act 1902. Evidence Act 1905.
	EXECUTIVE GOVERNMENT.
67	APPOINTMENT AND REMOVAL OF OFFICERS— Commonwealth Public Service Act 1902.
	THE JUDICATURE.
71—80	CONSTITUTION AND PROCEDURE OF THE HIGH COURT— Judiciary Acts 1903-1906. High Court Procedure Act 1903, *amended by* High Court Procedure Amendment Act 1903.
73	APPELLATE JURISDICTION OF THE HIGH COURT— Judiciary Act 1903. Papua Act 1905 (s. 43) Copyright Act 1905 (s. 73). Designs Act 1906 (s. 39)
76 (i.)	ORIGINAL JURISDICTION OF HIGH COURT— (1) *In matters arising under the Constitution or involving its interpretation*— Judiciary Act 1903 (s. 30).
(ii.)	(2) *In matters arising under Laws made by the Parliament*— Customs Act 1901 (ss. 221, 227, 245). Excise Act 1901 (ss. 6, 109, 134). Post and Telegraph Act 1901 (ss. 29, 43). Commonwealth Electoral Act 1902 (s. 193) Defence Act 1903 (s. 91). Patents Act 1903 (ss. 47, 58, 67, 84-87, 111). Commonwealth Conciliation and Arbitration Act 1904 (s. 31). Trade Marks Act 1905 (ss. 4, 34, 35, 44. 45, 70-72, 95, etc.) Australian Industries Preservation Act 1906 (ss. 10, 11, 13, 21, 22, 26). Referendum (Constitution Alteration) Act 1906 (ss. 27, 31). Lands Acquisition Act 1906 (ss. 10, 11, 24, 36-39, 45, 46, 50, 54, 56, 59).
77—(ii.)	EXCLUDING JURISDICTION OF STATE COURTS— Judiciary Act 1903 (ss. 38, 39, 57, 59).
(iii.)	INVESTING STATE COURTS WITH FEDERAL JURISDICTION— Judiciary Act 1903 (ss. 17, 39, 68). Customs Act 1901 (ss. 221, 227. 245). Excise Act 1901 (ss. 6, 109, 134). Post and Telegraph Act 1901 (ss. 29, 43). Commonwealth Electoral Act 1902 (s. 193). Defence Act 1903 (s. 91).

Section of Constitution.	Short Title of Commonwealth Act.
	Patents Act 1903 (ss. 30, 47, 58, 67, 75-77, 84-87, 111). Trade Marks Act 1905 (ss. 34, 35, 44, 45). Copyright Act 1905 (s. 73). Designs Act 1906 (s. 39).
78	RIGHT TO PROCEED AGAINST COMMONWEALTH OR STATE— Judiciary Act 1903 (ss. 56-67).
	THE STATE.
118	FAITH AND CREDIT TO STATE LAWS, RECORDS, ETC.— State Laws and Records Recognition Act 1901.
119	PROTECTION OF STATES FROM INVASION AND VIOLENCE— Defence Act 1903 (s. 51).
	TERRITORIES.
122	GOVERNMENT OF TERRITORIES— Papua Act 1905.
	MISCELLANEOUS.
125	SEAT OF GOVERNMENT— Seat of Government Act 1904.
128	ALTERATION OF CONSTITUTION— Referendum (Constitution Alteration) Act 1906. Constitution Alteration (Senate Elections) Act 1906.

SECTION III.

THE AUSTRALIAN COMMONWEALTH AND AUSTRALASIA.

§ 1. Early Knowledge of Australia.

1. **Introduction.**—On the occasion of the issue of the first Year Book of the Bureau of Census and Statistics of the *Commonwealth of Australia*, it seems appropriate that a tolerably complete account should be given of what is known of the early history of the discovery of this island continent. Limits of space will prevent this being done continually, and in future issues this account may appear only in extreme condensation.

2. **The Austral Land of the Ancients.**—While it is not possible to state at what time during the early history of civilization Australia was first discovered by the western world, that its existence was known in times of remote antiquity is certain. According to old Chaldean views of geography, there was an Austral land to the south of India ;[2] and in a fragment of the works of Theopompus of Chios [B.C. 374-320], preserved by Ælianus [A.D. 205-234], reference is made to the existence of an island of immense extent, beyond the seas which bounded Europe, Asia and Africa.[3] Manilius[4] in his Astronomicon refers in a somewhat curious way to the existence of a southern habitable region.[5], Ptolemy's [A.D. 107-161] map, dating back to about A.D. 150, shows a *terra incognita* to the south of India,[6] but according to Santarem,[7] there were no maps of the world in the first centuries of our era. It appears therefore that the ancients of the western world were somehow impressed with the idea of a *Terra Australis*, which was one day to be revealed. Though many rumours may have been idle guesses, some may have sprung from authentic information derived from voyagers in the Indian seas, more especially from the Greek soldiers who accompanied Alexander the Great [B.C. 356-323] to India.

3. **Precise Period of Discovery Unknown.**—Australia has been longer an unknown land to the Occident than any other region of the same extent, owing no doubt to its position at the antipodes of the civilized world. Its first discovery by Europeans is involved in considerable doubt, partly from the confusion of the names which were applied by early navigators and cartographers, and partly owing to the reticence observed by the Portuguese in the 16th and 17th centuries in regard to their discoveries.[8]

4. **Old Manuscript Charts and Globes.**—The maps of the world of the first period of the middle ages are scarce, and are not of much importance to the present subject. The most explicit reference which might warrant the supposition of the knowledge to the cartographers of that period of the existence of a *Terra Australis* is given in a mappa-mundi in a manuscript of the 8th century ;[9] to the south of Africa and Asia, and separated by the Indian Ocean, a fourth part of the world is represented beyond the equator. This then may be said to be the origin of the *Terra Australis incognita* ; at least it is the first representation we have of it on a map.

(i). *Marco Polo and de' Conti.* Towards the close of the 13th century, the Venetian traveller Marco Polo [1254-1324] penetrated farther eastwards than any other European, and the field of geographical knowledge was widened in consequence. In the various

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[1] Footnotes and references to authorities will be found at the end of this chapter, viz., in sub-section 8 (Bibliographical References.) The subject has been exhaustively studied by George Collingridge, of Sydney, whose erudite and able monograph has been kindly placed at the disposal of the Commonwealth Statistician by the author. See Note 1, Bibliography, hereinafter.

manuscript editions of his travels, which appeared subsequently, the terms *Java Major* and *Java Minor* occur frequently. At a later period Nicolo de' Conti[10] [*circa* 1440] was in the same localities, and in describing them he also uses the same terms. These travellers both considered our modern Java and Australia as one—the south coast of Java being unknown to them—and called it *Java Major*, distinguishing it from Sumatra, which they called *Java Minor*. The influence of Marco Polo's writings had an effect upon the cartography of the Australasian regions which lasted for nearly three hundred years. On some of the maps which appeared the Australian continent is called *Java Major*—this type of map is represented by the Dauphin chart (*circa* 1530)—while in others the Austral regions are called *Terra Australis*, and envelop the South Pole, extending in the correct longitude sufficiently far north to lead to the belief that the persons who were responsible for the charting of these maps possessed a definite knowledge of the existence of the Australian continent. A strait between New Guinea and the *Terra Australis* is another feature of this type of map, which is represented by the charts of Ortelius [*circa* 1570] and of Mercator [1569-1587]. It should be stated, however, that in some of the maps belonging to each of these types, the Australian regions are so inaccurately represented that one sees at a glance that guesswork, assumption, or hearsay was resorted to.

(ii.) *The British Museum Mappamundi.* There is a map of much interest in the British Museum,[11] itself bearing no date, but of which a copy in Santarem's collection bears the date 1489. In this map is the first appearance of something less problematical than the *Terra Australis incognita*; no degrees of longitude or latitude are marked, but to the south of the *Aureus Chersonesus* (the Malay Peninsula), and in the same latitude as the southern parts of Africa, is shewn a short line of coast running almost directly north and south. This coast line can be no other than the west coast of Australia.

(iii.) *Martin Behaim's Globe.* The oldest known globe extant was constructed in 1492 from geographical data and legends furnished by Martin Behaim [1436-1506], of Nüremberg.[12] On this globe is found a rough chart of what is unmistakably intended for the western coasts of Australia from the vicinity of Dampier's Archipelago to Cape Leeuwin. The eastern coast lines of some of the islands shewn on this globe in the Australasian regions have a remarkable resemblance to the east coasts of Australia, both in shape and position.[13] Lately there has been found a wooden globe, now in Paris, on which an inscription occurs to the effect that the *Terra Australis* was discovered in 1499.[14] The assertion lacks confirmation, and possibly refers to discoveries made by Magalhaens [1470-1521] in South America, since some of the contemporary maps of the period appear to shew that the term *Terra Australis* was applied by some cartographers to Australia as well as to those regions known to us as Terra del Fuego.[15]

(iv.) *The Dauphin Map.* We now arrive at the most important document which has hitherto come to light connected with the early discovery of Australia—the Dauphin map[16] of the assigned date 1530-1536. It belongs to a type of manuscript, Lusitano-French planispheres, which is represented by several specimens,[17] all of which are copies from a prototype, which has either been destroyed, or has not yet been found. In this type of maps, the dates of which range from 1530 to 1536, the *Terra Australis* appears in a new form and under a new name, being referred to as Java la Grande. South of the island of Java, and separated from it by a strait, these maps exhibit an extensive continent, stretching southwards, the north coast of which is dotted with numerous designations of dangerous coasts, capes, rivers and mountains.[18]

5. *Discoveries by Spanish and Portuguese Mariners.* The last decade of the 15th century, and the commencement of the 16th century was a most active period in the work of discovery, and a number of vessels and expeditions were equipped in the ports of Spain and Portugal for the purpose of exploiting the New World.

(i) *Their First Voyages to the Orient.* Two well-defined and distinct lines of approach were attempted almost simultaneously in the hopes of reaching the Orient. The Portuguese after rounding the Cape of Good Hope in 1497, pushed farther and farther east till they reached the spice islands of the Malay Archipelago; while the Spaniards, relying on the new scientific conclusion that the world was a sphere and not a plane, adopted the idea that the East might be reached by deliberately starting out in an opposite direction, and the visit of Magalhaens [1470-1521] to the Philippine Islands in 1521, brought the Spaniards well past the easternmost stations of the Portuguese, and completed the circle of the globe. In the years following the return of these explorers and navigators, a number of maps appeared; in some of these maps are shown islands in the Australasian regions more or less conforming in parts to the configuration of the Australian coasts,[19] while in others all evidence of the knowledge of the existence of the *Terra Australis* is suppressed, perhaps either for political purposes, or because it was not deemed advisable to include in the maps of the period, a region which had not been sufficiently surveyed.

(ii.) *De Quiros and de Torres.* The last and perhaps the most important of the Spanish voyages of discovery was that undertaken by de Quiros in 1605, taking de Torres with him as his admiral, with the object of founding a colony on the island of Santa Cruz.[20] Hearing from the natives that "in the south there were lands very fertile and populous, and running down to a great depth in the said south," de Quiros abandoned his idea of the colonization of Santa Cruz, and sailed southwards, discovering a number of islands, and among them the island now known as Espiritu Santo, one of the New Hebrides group, which de Quiros, under the impression that he had discovered the southern land of which he was in search, named "La Austrialia del Espiritu Santo." De Quiros parted company with his admiral, and sailed for Mexico, leaving de Torres to continue the work of discovery. De Torres put back to the north, and sighted land in about lat. 14° S.; from thence he passed through the straits, which now bear his name, and proceeded to the Philippine Islands to refit.[21] De Quiros and de Torres expedition closes the period of Spanish activity in the work of discovery in Australasian regions, and the Dutch were allowed to remain the sole masters of the situation.

6. **The Dutch Period of Activity.**—The Dutch opportunity for discovery on the coasts of Australia commenced with the decline of the Portuguese and Spanish naval supremacy. In 1595 the Dutch sent out their first expedition to the East, consisting of four ships which sailed from the Texel, and which returned in August, 1597.

(i.) *Cornelius Wytfliet.* It was about this time that Cornelius Wytfliet's map of the world was published, and in 1597 an English edition of his work, *Descriptionis Ptolemaicæ Augmentum*, was published at Louvain. In Wytfliet's map the eastern and western coasts of Australia are roughly indicated, as is also the Gulf of Carpentaria. The following passage, which occurs in the book just referred to, is, perhaps, the first distinct account that we have of Australia:—"The *Terra Australis* is the most southern of all lands. It is separated from New Guinea by a narrow strait. Its shores are hitherto but little known, since, after one voyage and another, that route has been deserted and seldom is the country visited, unless when sailors are driven there by storms. The *Australis Terra* begins at one or two degrees from the equator, and is maintained by some to be so great an extent that, if it were thoroughly explored, it would be regarded as a fifth part of the world."

(ii.) *First Authenticated Discovery of Australia.* The period of known Dutch discovery commenced with the establishment of the Dutch East India Company in 1602.[22] It was in 1605 that the *Duyfken* was despatched from Bantam to explore the islands of New Guinea; she sailed along what was thought to be the west coast of that island, but her course, in fact, lay along by the islands of the west side of Torres Straits, to that part of the *Terra Australis* which lies a little to the south-west of Cape York, and thus, without being aware of it, the commander of the *Duyfken* made the first authenticated discovery of the Great South Land. The country was found for the most part desert; some of the crew were murdered by the blacks; and, from want of provisions, the expedition was obliged to turn back. The farthest point of land in their map they called Cape Keer Weer, or Turn Again. The Dutch continued their attempts to explore the unknown, sending out, in 1616, the ship *Eendracht*, commanded by Dirk Hartog, who sailed along the west coast of Australia from lat. 26° 30′ S. to lat 23° S. The *Pera* and the *Arnhem*, Dutch vessels from Amboina, in 1623 explored the Gulf of Carpentaria, giving to its westward peninsula, on the side opposite to Cape York, the name of Arnhem Land. The name of Carpentaria was also bestowed on the vast gulf in compliment to Peter Carpenter, then Governor of the Dutch East India Company. It is not, perhaps, generally known that in the year 1624 a petition for "the privilege of erecting colonies" in the *Terra Australis* was presented to King James I. by Sir William Courteen, an enterprising English merchant,[23] but it does not appear that the petition was granted.

(iii.).—*Discovery of the South Coast of Australia—Pelsart and Pool.* A portion of the south coast of Australia is shown for the first time on some old Dutch charts, which state the date of discovery of these parts to have been in the year 1627,[24] when Pieter Nuyts, in command of the *Gulde Zeepaert*, sailed along the coast from Cape Leeuwin, and sighted the whole shore of the Great Bight.[25] In the following year de Witt, commander of the vessel *Vianen*, discovered land extending for about 50 miles on the north-west coast of Australia in lat. 21° S. In 1629 the *Batavia*, commanded by Francis Pelsart, was wrecked on the reef known as Houtman's Abrolhos on the western coast of Australia. The captain, with a few of his crew, explored the coast of the mainland for some days, and eventually succeeded in reaching Java.[26] Pelsart was the first person to carry to Europe an authentic account of the west coast of Australia, which he described in anything but favourable terms. It may here be remarked that his journal contains what is probably the first notice and description of the kangaroo by any white explorer. The next Dutch discoveries were made in 1636, when Gerrit Pool, in command of the yachts *Amsterdam* and *Wesel*, visited the Gulf of Carpentaria. They descried the coast of Arnhem Land in lat. 11° S., and sailed along the coast for some 30 miles, when, turning to the north, they visited the unknown islands of the Timor Sea.

(iv.) *Abel Janszoon Tasman.* An important era of discovery commenced with Tasman's (1602-1659) voyage in the year 1642. The principal object of the expedition was to ascertain the extent of the Great South Continent, and to find out whether a passage to the south of it led into the South Sea. Tasman sailed from Mauritius with two vessels, the *Heemskirk* and the *Zeehaen*, in October, 1642, and steering south reached lat. 54° S. He then steered E. by N., and thus made the coast of a land which he believed to form part of the Great South Land, and which he named Van Diemen's Land. After a short stay, Tasman continued his voyage, and sailing in a north-easterly direction, he discovered another important land which he named New Zealand. On landing, an unprovoked attack was made by the Maoris, and four sailors were killed. Tasman sailed along the west coast of the North Island as far as North Cape, from which place he directed his course to New Guinea. Tasman made another voyage in 1644, his main object being to ascertain whether New Guinea and Van Diemen's Land were connected with the Great South Land or not. With three vessels under his command he sailed into the Gulf of Carpentaria, but failing to find the straits through which Torres had passed in 1606, he sailed along the northern coasts of Australia, and returned to Java.[27] No discoveries of importance were made during Tasman's second voyage; nevertheless, after 1644, when the first maps on which his track is charted, made their appearance, the outline of Australia assumed for the first time a relatively true position, and a more accurate delineation of form. The period of Dutch discoveries may be said to have ended with Tasman's second voyage; with the decline of the Dutch maritime power, their interest in Australian discovery disappeared, and practically the only subsequent occasions when their vessels touched Australian coasts appear to have been when they were driven out of their course by contrary winds or currents.

(v.) *The last of the Dutch Discoveries.* In 1656 the ship *Verguldε Draeck* was wrecked not far from the place where Pelsart had met with disaster in 1629. About 75 of those on board reached the shore alive, and one of the ship's boats succeeded in reaching Batavia. Though several vessels were subsequently sent out to rescue the castaways no news was ever obtained of them, and the search was abandoned in 1658, when the ship *Waeckende Boey* returned to Batavia after having unsuccessfully spent some weeks in an endeavour to obtain some news of the castaways. The commander of this vessel gave some account of the west coast of Australia, and of the island now known as Rottnest Island, describing the country as covered with deep grass and sand, and the coast as everywhere dangerous, on account of the reefs of rock.[28] The country was again visited by the Dutch during a search for a missing ship, thought to have been wrecked on the Abrolhos. The expedition, under the command of William de Vlamingh, reached Rottnest Island on the 29th December, 1696, and landed near the mouth of the Swan River, which they ascended for six or seven leagues. They did not encounter any blacks, though they came across several huts, and also found footprints of men, dogs, and emus. The expedition subsequently proceeded northward, but failed to find any traces of the object of their search.[29] In 1705 another Dutch exploring squadron, under the command of Martin Van Delft, sailed from Batavia, and explored and named part of the north-west coast of Australia. This expedition is the last one recorded before the celebrated voyages of Captain James Cook [1728-1779].

7. **Discoveries by the English.**—In the meantime the English had made their first appearance on the Australian coast in 1688, when the north-western shores were visited by William Dampier, as supercargo of the *Cygnet*, a trading vessel whose crew had turned buccaneers. The *Cygnet* made the land in lat. 16° 50′ S., just one hundred years before the first English Governor reached New South Wales,[30] and sailed along the coast as far as Cape Levêque. In describing the country Dampier says:—"New Holland is a very large tract of land. It is not yet determined whether it is an island or a main continent, but I am certain that it joins neither to Asia, Africa, or America. The land is of a dry, sandy soil, destitute of water, unless you make wells, yet producing divers sorts of trees."

(i.) *Dampier's Voyage in the "Roebuck."* Later, in 1699, Dampier again visited Australia, in command of H.M.S. *Roebuck*. He landed in Shark's Bay, and he then sailed in a northerly direction for a distance of about 900 miles, as far as Dampier's Archipelago, and thence to Roebuck Bay. On his return to England Dampier published an account of his voyage, in which he gives a description of the trees, flowers, birds, and reptiles he observed, and also of his encounters with the natives.[31]

(ii.) *Captain James Cook.* The various reports and charts brought back by the explorers and navigators of the 17th century had opened the way for considerable discussion as to the true delineation of the coast lines of Australia; as to whether Tasmania and New Zealand were attached to Australia, or whether they were separated from it, but themselves formed part of a vast Antarctic continent. It was Captain Cook, in his voyages from 1769 to 1777, who communicated the most important discoveries with regard to these questions, and who first opened up the Australian coast to European enterprise and settlement. Cook's first voyage to Australian waters was primarily undertaken for the purpose of observing the transit of Venus from Otaheite, but he was also commissioned to ascertain "whether the unexplored part of the southern hemisphere be only an immense mass of water or contain another continent."

(iii.) *The Voyage of the "Endeavour."* Cook was placed in command of H.M.S. *Endeavour*, a barque of 370 tons burthen, and carrying about 85 persons. He was accompanied by Sir Joseph Banks [1743-1820], Dr. Solander the naturalist, Green the astronomer, two draughtsmen, and a staff of servants.[32] After successfully observing the transit of Venus from Otaheite, the *Endeavour's* head was turned towards New Zealand, and this land was sighted on the 7th October, 1769, in the neighbourhood of Poverty Bay. Cook determined to sail along the coast, and after eventually circumnavigating both the North and South Islands, thus proving that New Zealand was not connected either with the supposed Antarctic continent or with Australia, he took formal possession of the land in the name of the British Crown. The *Endeavour* remained on the New Zealand coasts until the 31st March, 1770, when her course was set in a westerly direction with the intention of making for Tasmania. Encountering very rough weather and being driven out of his course to the northward, Cook sighted the mainland of Australia at 6 a.m. on the 19th April, 1770. at a place which he called Point Hicks, after his first lieutenant, who first saw it. Another point a little to the eastward he named Ram Head, and then coasting northwards, passing and naming various headlands on the way, Botany Bay[33] (first called Sting Rays Harbour) was discovered on the 28th April, 1770, and as the anchorage appeared to be good, the *Endeavour* entered the inlet and dropped anchor. On the following day Cook landed, and though he first met with some opposition from the blacks, they were soon dispersed by the firing of two or three muskets. After searching unsuccessfully for fresh water, the explorers embarked in their pinnace and went over to the north side of the harbour, where, by digging holes they were able to procure sufficient fresh water to supply the ship. On the 1st May, 1770, a seaman named Sutherland died on board the *Endeavour*, and his body was taken ashore to be buried. Sutherland was in all probability the first British subject buried in Australian soil. The *Endeavour* remained in Sting Rays Harbour until the 6th May, 1770, on which day Port Jackson was passed and named,[34] though Cook forebore to enter the heads. Sailing in a northerly direction numerous capes, inlets, and islands were seen and named, such as Port Stephens, Bustard Bay, the Keppel Islands and 'Morton' Bay. Landing was effected at several places, both for the purpose of making observations and of obtaining fresh water.[35] Cook thus coasted along for nearly 1300 miles, making notes and observations as he proceeded, for the purpose of his chart, until on the 11th June, 1770, the expedition nearly came to a disastrous ending, through the *Endeavour* striking some rocks when in the vicinity of Trinity Bay. In his log Cook describes the grave dangers and hardships to which they were exposed. By jettisoning all heavy gear that could be spared, they succeeded in passing a sail, into which oakum, wool, and other materials had been sewed, right under the ship's keel, and were then able to warp the ship off the rocks. In spite of strong gales and hazy weather, and in spite of at times "being entangled with shoals on every side," the vessel was steered to the mouth of the Endeavour River, and there careened and thoroughly repaired. These repairs occupied nearly two months, and it was not until the 4th August, 1770, that the *Endeavour's* course was again set to the north. Still threading his way through numerous islands and reefs until he reached Cape York, Captain Cook landed on a small island which he named Possession Island, and took formal possession of the land he had discovered from lat. 38° S. to lat. 10½° S. The *Endeavour* then sailed through Torres Straits, and anchored in the Downs on the 13th June, 1771.

(iv.) *Cook's Later Voyages.* The communications made by Cook on his return gave rise to renewed speculation as to the existence of a great southern continent, and in 1772 Cook was again appointed to lead an exploring expedition in the ships *Resolution* and *Adventure*. These vessels soon became separated, and Cook, after visiting New Zealand, spent some time in cruising in southern latitudes. Satisfied that if a great antarctic continent did exist, it lay so far to the south as to be useless for the purposes of trade or settlement, he abandoned the investigation, and returned to England in 1774. Cook's last voyage was undertaken in 1776, but on that occasion his main object was to discover a north-west passage between the Atlantic and Pacific Oceans. After an extended voyage, he returned for the winter of 1778 to Hawaii, and met his tragic death in Karakara Bay on the 14th February, 1779.

(v.) *Flinders and Surgeon Bass.* At Captain Cook's death the whole coast of Australia may be said to have been practically explored. The remaining discovery of great importance to be made was the existence of a passage between Tasmania and Australia. This channel was discovered by Flinders and Bass in 1798. The causes of navigation and of science generally were greatly benefited by the voyages in Australasian waters of the *Investigator* and the *Beagle*, but Surgeon Bass' discovery may be said to have completed the coast map of Australia.

8. **Bibliographical References.**—The following bibliographical references will aid the study of the early history of the discovery of Australia:—

1. For a very full account of what is known regarding "The Discovery of Australia" by the western world, reference may be made to the classic and exhaustive monograph, bearing that title, by George Collingridge, Esquire, Sydney. Hayes Bros., 1895. The information here given has been largely derived from the source indicated.

2. According to Mr. Hyde Clarke. See "Notes and Queries," Vol. V., p. 356, 1888; see also "La magie chez les Chaldéens," p. 151, by Mr. F. Lenormant.

3. See "Early Voyages to Australia," p. ii., by Mr. R. H. Major, 1859.

4. Probably a contemporary of Augustus or of Tiberius Cæsar.

5. Lib. 1, 234.

> *Ex quo colligitur terrarum forma rotunda;*
> *Hanc circum variæ gentes hominum atque ferarum.*
> *Aeriæque colunt volucres. Pars ejus ad arctos*
> *Eminet, Austrinis pars est habitabilis oris.*
> *Sub pedibusque jacet nostris.*

6. "La geografia di Claudio Tolemeo Alexandrino," Venezia, 1574.

7. "Essai sur l'histoire de la Cosmographie et de la Cartographie du Moyen-Age," 1849.

8. Humboldt in his "Histoire de la Géographie du Nouveau Continent," Vol. IV., p. 70, says that the Kings of Portugal forbade, upon pain of death, the exportation of any marine charts.

9. The MS. is in the Royal Library of Turin. A copy is contained in Santarem's and Jomard's collection.

10. For an account of Conti's travels, see "India in the 15th Century," edited by Mr. R. H. Major in 1857, for the Hakluyt Society.

11. Known as the "British Museum Mappamundi."

12. The original globe is preserved in the archives of the Behaim family in Nüremberg. A *fac-simile* is to be seen in the Paris National Library.

13. For further particulars of this globe, see "The Discovery of North America," by Mr. H. Harrisse, p. 391; see also Jomard's "Monuments de la Géographie," Paris, 1854.

14. Mr. Harrisse ascribes to this globe the date of *circa* 1535. See "The Discovery of North America," Harrisse, p. 613. The inscription on the globe reads: "*Terra Australis nuper inventa anno 1499, sed nondum plene cognita.*"

15. *E.g.* (*a*) Mappamundi of Orontius Finnaeus (1531), the Australasian parts of which are reproduced in Mr. A. F. Calvert's "The Discovery of Australia," p. 18. (*b*) Schöner's Weimar Globe of 1533. Described by Mr. Harrisse in "The Discovery of North America."

16. A reduced copy of this map is given in Mr. Harrisse's "Early Voyages to Australia." Introduction, p. xxvii. The Dauphin Map is sometimes called the Harleyan Map, having belonged to Edward Harley, Earl of Oxford. See "Journal and Proceedings of the Royal Geographical Society of Australasia," Sydney, 1891-2, Vol. V.

17. *E.g.* Two maps by Jean Roze, 1542, in the British Museum, and a map by Pierre Descelier, 1550, the Australasian parts of all of which maps are reproduced in Mr. Collingridge's book, referred to above.

18. Mr. H. Harrisse, "The Discovery of North America," pp. 96-7.

19. *E.g.* (*a*) The Hunt-Lenox Globe (*circa* 1506), of which a description is given in Coote's introduction to "Johann Schöner," p. xii., London, 1888. See also "Recollections of New York," by J. Lenox. 1886, pp. 140-3. (*b*) Ruysch's Mappamundi, 1508, for a description of which see "Johann Schöner," edited by C. H. Coote, p. 21. (*c*) The Schönerian Frankfort Gores, 1515, which is reproduced in Jomard's "Monuments de la Géographie." Plates xv. and xvi.

20. See a translation of de Torres' narrative by Alex. Dalrymple, from a Spanish MS. in his possession; first printed in Burney's "Discoveries in the South Sea," Part 2, p. 467. London, 1806.

21. It is not probable that Torres passed through the straits which bear his name by mere chance, as they were marked in Wytfliet's map, dedicated in 1597 to the King of Spain.

22. The instructions issued to Tasman for his second voyage in 1644, by Van Diemen and the members of the Council of the Dutch East India Company, contain a preface in chronological order of the previous discoveries by Dutch explorers in Australasian regions. These instructions are printed in full in Harrisse's "Early Voyages to Australia," and it is from them that most of the present knowledge of early Dutch discoveries is derived.

23. See "The Torch," March, 1888.

24. In the Mar di India Chart, the date given is the 26th January, 1627; in Tasman's Chart, as published in Amsterdam in 1859, the date given is the 26th February, 1627.

25. See instructions to Tasman, *ut sup.*

26. For a full account of this event see Mr. R. H. Major's "Early Voyages to Australia."

27. The track which Tasman followed in his two voyages is traced in Captain Bowrey's map, reproduced in Major's "Early Voyages to Australia."

28. See translation from a Dutch MS. in the Royal Archives at the Hague, published in Major's "Early Voyages to Australia."

29. "The Journal of a Voyage made to the unexplored South Land in the years 1696-7," printed at Amsterdam, 1701.

30. Dampier sighted land on the 4th January, 1688; Phillip on the 3rd January, 1788.

31. See "Dampier's Voyage round the World." Vol. I., p. 464.

32. In the Record Office at London, there are no less than ten logs of this voyage; three are anonymous, but six are signed by ship's officers, and one, from circumstantial evidence, is no doubt by Green the astronomer. These logs are all printed in the "Historical Records of New South Wales." 1893. Vol. I.

33. Nowhere in either the original papers of Cook, or any of his officers, does the name Botany Bay appear.

34. In this connection it is worthy of notice that the designation of Port Jackson has been misunderstood by many. It was stated that it was so named after a seaman called Jackson on board the *Endeavour*. This statement was copied for many years, though it does not appear that there was any foundation for it. Sir George Jackson, who afterwards changed his name to Duckett to meet the provisions of a will, was at this time, together with Mr. P. Stephens, joint secretary to the Admiralty, and Cook named Ports Jackson and Stephens after these two officials.

Moreover it has been ascertained that no seaman of the name of Jackson was rated on the *Endeavour*. See "Historical Records of New South Wales," Vol. I. Notes at pp. 162 and 107, and also pp. 334-5.

35. See Hawksworth's "Cook's Voyages," Vol. III., p. 519, for observations made in Bustard Bay, and again at p. 528 for an account of Cook's landing at Thirsty Sound. The following are the places at which Cook landed, with dates, according to his log:—At Sting Rays Harbour on the 5th May, 1770; in Bustard Bay on the 23rd May; in Thirsty Sound on the 30th May; in the vicinity of the mouth of the Endeavour River during part of June, July, and part of August; on an island off Cape Flattery on the 12th August; and lastly on Possession Island on 22nd August.

Finally, it may be said that the student who desires to acquire more information as to what is known of the early history of discovery in the region of Australia will do well to consult the "critical, documentary and historic investigation concerning the priority of discovery in Australasia by Europeans before the arrival of Lieut. James Cook in the *Endeavour*, in the year 1770," by George Collingridge, referred to in note 1 above.

§ 2. The Taking Possession of Australia.

1. **Annexation of Eastern Part of Australia.**—Although as far back as 1503 a French navigator named J. Binot Paulmier, Sieur de Gonneville, claimed to have landed on the west coast of Australia, and similar claims were put forward by the French and Portuguese in respect of alleged discoveries in 1531 and 1601 by Guillaume le Testre and Manoel Godinho de Eredia respectively, it was not until the 22nd August, 1770, that the history of Australia was brought into political connection with western civilization. It was on that date that Captain Cook took possession "of the whole eastern coast, from lat. 38° to this place, lat. 10½° S., in right of His Majesty King George the Third." Cook, however, proclaimed British sovereignty only over what are now the eastern parts of New South Wales and Queensland, and formal possession, on behalf of the British Crown, of the whole of the eastern part of the Australian Continent and Tasmania, was not taken until the 26th January, 1788. It was on this last date that Captain Phillip's commission, first issued to him on the 12th October, 1786, and amplified on the 2nd April, 1787, was read to the people whom he had brought with him in the "First Fleet."

2. **Original Extent of New South Wales.**—The commission appointed Phillip "Captain-General and Governor-in-Chief in and over our territory called New South Wales, extending from the Northern Cape or extremity of the coast called Cape York, in the latitude of ten degrees thirty-seven minutes south to the southern extremity of the said territory of New South Wales or South Cape in the latitude of forty-three degrees thirty-nine minutes south, and of all the country inland westward as far as the one hundred and thirty-fifth degree of east longitude reckoning from the meridian of Greenwich, including all the islands adjacent in the Pacific Ocean within the latitudes aforesaid of ten degrees thirty-seven minutes south and forty-three degrees thirty-nine minutes south."

Although in November, 1769, Captain Cook had taken possession of the North Island of New Zealand, and in January, 1770, also of the South Island, it is a matter of doubt whether, at the time when Captain Phillip's commission was drawn up, New Zealand was considered as one of the "islands adjacent in the Pacific Ocean." The southern extremity is beyond the south latitude named in the document; on the other hand, by the implication of the Supreme Court Act (Imperial), which in 1823 instituted a Supreme Court for New South Wales, and which expressly contemplates New Zealand as part of that colony, it would appear to have been recognised as in some sense a dependency. Various hoistings of flags notwithstanding, New Zealand does not appear to have unequivocally become British territory until 1840. In that year, on 29th January, Captain Hobson arrived at the Bay of Islands. On the following day he read the commission, which extended the boundaries of the colony of New South Wales so as to embrace and comprehend the Islands of New Zealand. On 5th February the Treaty of Waitangi, made with the native chiefs, was signed. Finally, on 21st May, British sovereignty over the Islands of New Zealand was explicitly proclaimed. From that date until 3rd May, 1841, New Zealand was indubitably a dependency of New South Wales.

3. **Annexation of Western Australia.**—Exactly twelve years before New Zealand became a separate colony the western half of the Australian continent had become a British possession, for it was on 2nd May, 1829, that Captain Fremantle hoisted the British flag on the south head of the Swan River, and took possession of "all that part of New Holland which is not included within the territory of New South Wales." Thus, before the middle of 1829 the whole territory, now known as the Commonwealth of Australia, had been constituted a dependency of the United Kingdom.

§ 3. The Creation of the Several Colonies.

1. **New South Wales as Original Colony.**—From what has been said, the mainland of Australia was, in Governor Phillip's commission of 1786, originally as shewn on map No. 1, that is, it was divided by the 135th meridian of east longitude into two parts. The earliest colonists believed that Van Diemen's Land—the present State of Tasmania—was actually joined to the mainland, and it was not till 1798 that the contrary was known. In that year, by sailing through Bass Straits, Flinders proved that it was an island. The territory of New South Wales, as originally constituted, including New Zealand, was thus:—

	Square Miles.
Australia, east of 135° Longitude East	1,454,312
Van Diemen's Land	26,215
New Zealand	104,471
Total	1,584,998

The western part of Australia, not yet annexed, comprised originally 1,494,054 square miles.

2. **Separation of Van Diemen's Land.**—In 1825, Van Diemen's Land, as Tasmania was then called, was politically separated from New South Wales, being constituted a separate colony on 14th June of that year. This reduced the area of New South Wales and its territorial dependencies by 26,215 square miles, that is, to 1,558,783 square miles.

3. **Extension of New South Wales Westward.**—In 1827 the western or inland boundary of New South Wales was extended westward to the 129th meridian, thus increasing its area by 518,134 square miles, and making it, including New Zealand and excluding Tasmania, 2,076,917 square miles, or excluding also New Zealand, 1,972,446 square miles.

4. **Western Australia constituted a Colony.**—The territory annexed by Captain Fremantle in 1829, viz., "all that part of New Holland which is not included within the territory of New South Wales," extended eastward to the 129th meridian, and comprised 975,920 square miles. The constitution of this area into the Colony of Western Australia, now one of the six States of the Commonwealth, was the consequence of Fremantle's act. By it the annexation of the whole of the Continent of Australia by the British Crown was completed. The Australian colonies at this time were as indicated in the following table, and illustrated by map No. 2:—

Colony.	Date of Annexation.	Date of Creation.	Date of first Permanent Settlement.	Area. Square miles.
New South Wales (including New Zealand)	1770	1786	1788	2,076,917
Van Diemen's Land ...		1825	1803	26,215
Western Australia	1829	1829	1829	975,920

5. **Creation of South Australia as a Province.**—On 15th August, 1834, the Act 4 and 5 William IV., cap. 95, was passed, creating South Australia a "province," and on 28th December, 1836, settlement took place. The new colony embraced 309,850 square miles of territory, which, lying south of the 26th parallel of South latitude, and between the 141st and 132nd meridians of East longitude, was up to that time included within the territory of New South Wales, as will be seen on reference to map No. 3. Thus the area of New South Wales and its territorial dependency, New Zealand, was reduced to 1,767,067 square miles.

6. **Separation of New Zealand.**—New Zealand, annexed by proclamation in 1840 as a dependency of New South Wales, as already stated, was, by letters patent of 16th November of that year, constituted a separate colony under the powers of the Act 3 and 4 Vic., cap. 62, of 7th August, 1840. Proclamation of the separation was made on 3rd May, 1841. The area of the colony is 104,471 square miles, and its position in reference to Australia is shown on map No. 4. This separation reduced the political territory of New South Wales to 1,662,596 square miles. See map 3.

7. **Separation of Victoria.**—In 1851, what was known as the "Port Phillip District" of New South Wales, was constituted the Colony of Victoria, "bounded on the north and north east by a straight line drawn from Cape Howe to the nearest source of the River Murray, and thence by the course of that river to the eastern boundary of the colony of South Australia." The area of the new colony is 87,884 square miles, and its separate existence took effect from 1st July 1851, upon the issuing of the writs for the first election of elective members of the Legislative Council. This reduced the territory of New South Wales to 1,574,712 square miles, as indicated on map 4.

8. **Separation of Queensland.**—In 1859, letters patent issued on 6th June constituted what was then known as the "Moreton Bay District" of New South Wales, a separate colony, under the name of Queensland, whose boundary was defined as a line commencing on the sea coast at Point Danger, in latitude about 20° 8′ south, running westward along the Macpherson and Dividing Ranges and the Dumaresq River, to the McIntyre River, thence by the 29th parallel of south latitude to the 141st meridian of east longitude; on the west, the 141st meridian of longitude from the 29th to the 26th parallel, and thence the 138th meridian north to the Gulf of Carpentaria, together with all the adjacent islands, their members and appurtenances in the Pacific Ocean." The area concerned is 670,500 square miles. By this separation, the territory of New South Wales was divided into two parts, viz., one of 310,372 square miles, the present State, and another of 593,840 square miles, of which 523,620 square miles is now the Northern Territory, and 70,220 square miles is now a part of South Australia. These facts are shewn on Map No. 5.

9. **No further Constitution of Colonies.**—Since the separation of Queensland, no other creation of colonies has taken place in Australia, though the boundaries of New South Wales and South Australia were later altered. The dates of foundation of the Australasian Colonies, and their areas at the close of 1859, were therefore as hereunder:—

Colony.	Date of Annexation.	Date of Creation.	Date of first Permanent Settlement.	Area. Square miles.
New South Wales	1770	1786	1788	904,212
Tasmania...	1770	1825	1803	26,215
South Australia	1770	1834	1836	309,850
Victoria	1770	1851	1834	87,884
Queensland	1770	1859	1824	670,500
Western Australia	1829	1829	1829	975,920
New Zealand	1840	1841	1814 ?	104,471[1]

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[1] By proclamation dated 10th June, 1901, the area of the Dominion was increased by 280 square miles, making it now 104,751 square miles, by the inclusion of the Cook Group and other Islands.

10. **The Changing Boundaries of the Colonies.**—When, on 15th August, 1834, the Imperial Government constituted the province of South Australia, there lay, between its western boundary and the eastern boundary of Western Australia (as proclaimed by Fremantle in 1829) a strip of country south of the 26th parallel of south latitude, and between the 132nd and 129th meridians of east longitude, legally included within the territory of New South Wales. The area of this territory, frequently but improperly referred to as "No Man's Land," has been calculated to cover approximately 70,220 square miles.[1] On 10th October, 1861, by the authority of the Imperial Act 24 and 25 Vic., cap. 44, the western boundary of South Australia was extended so as to cover this strip, and to coincide with the eastern boundary of Western Australia—the 129th meridan. The area of South Australia thus increased by 70,220 square miles, became 380,070 square miles, and her territory that represented on Map No. 6. Nearly two years after this accession of territory, viz., on 6th July, 1863, the Northern Territory, containing 523,620 square miles—also formerly a part of New South Wales—was, by letters patent, brought under the jurisdiction of South Australia, whose area was thus increased to 903,690 square miles; whilst that of New South Wales was diminished by these additions to South Australia, and by the separation of the colonies of New Zealand, Victoria, and Queensland, till its area became only 310,372 square miles. The territories of Tasmania, Western Australia, and the three other separated colonies, with the exception of some minor islands added to Queensland, remain as originally fixed.

11. **Australasia, 1863 to 1900.**—The immense area generally known as Australasia had thus, by 1863, been divided into seven distinct colonies, the areas of which are shewn below:—

DATE OF CREATING THE SEVERAL COLONIES.

Colony.	Year of Formation into Separate Colony.	Present Area in Square Miles.	Colony.	Year of Formation into Separate Colony.	Present Area in Square Miles.
New South Wales ...	1786	310,372	New Zealand ...	1841	104,471[3]
Tasmania	1825	26,215	Victoria	1851	87,884
Western Australia ...	1829	975,920	Queensland ...	1859	670,500
South Australia (proper)[2]	1834	380,070	Northern Territory [2]	1863	523,620

Commonwealth ... ... 2,974,581 square miles.
Australasia ... ... 3,079,052 square miles.[4]

From 1st January, 1901, the colonies mentioned above, with the exception of New Zealand, have become federated under the name of the "Commonwealth of Australia," the designation of "Colonies" being at the same time changed into that of "States." The total area of the Commonwealth is, therefore, 2,974,581 square miles, or about equal to the area of the United States of America, exclusive of Alaska, or to that of all Europe, less about one-third of Russia.

The evolution of the various States will be seen in the accompanying diagrams.

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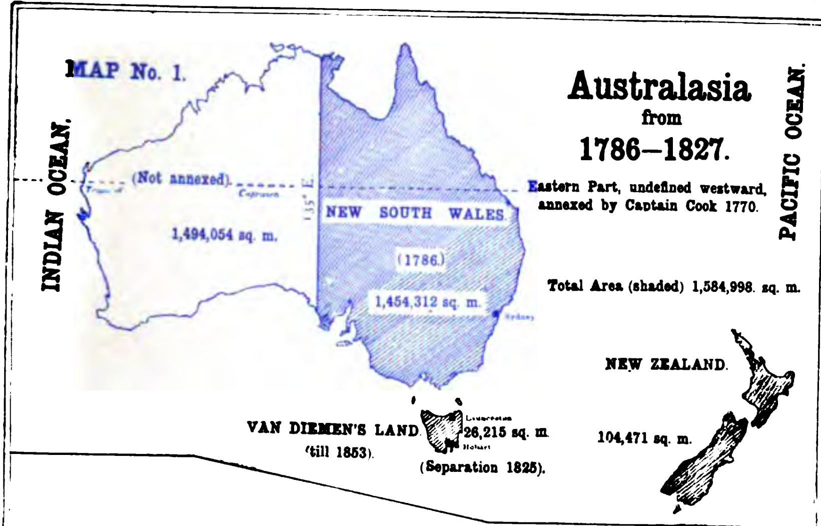
[1] The calculation has been made in this Bureau. The area has usually been left unstated in references to the territory, but when approximations have been given the margin of error seems to have been somewhat large.

[2] South Australia with the Northern Territory is 903,690 square miles.

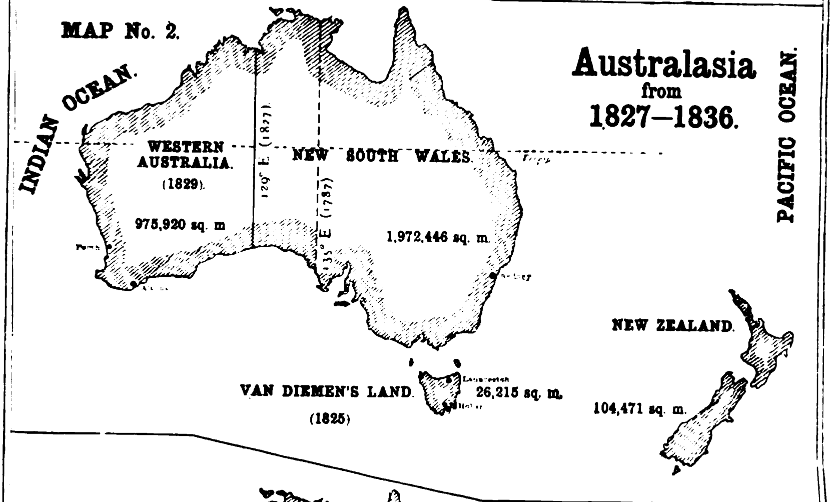
[3] Now 104,751 square miles: increased 10th June, 1901.

[4] Now 3,079,340 square miles.

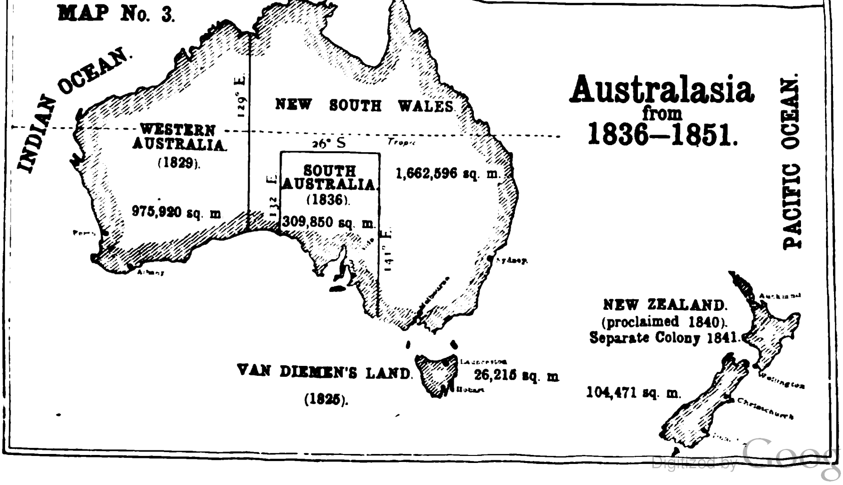
MAP No. 1.



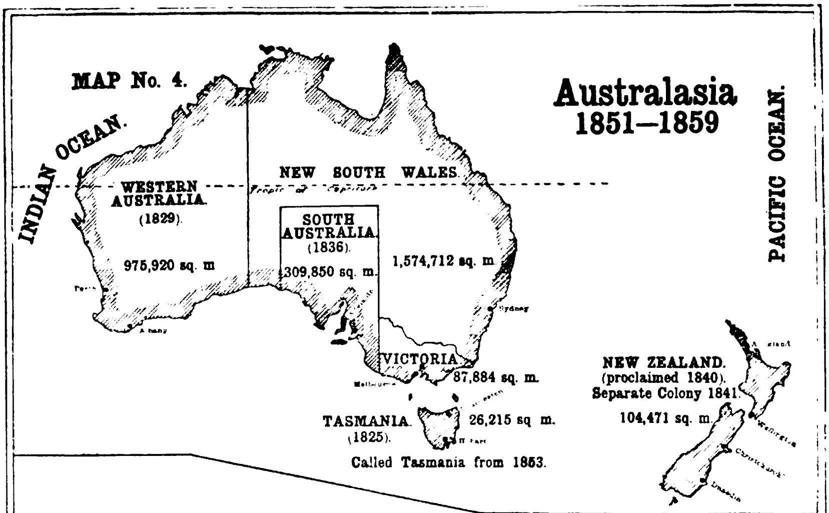
MAP No. 2.



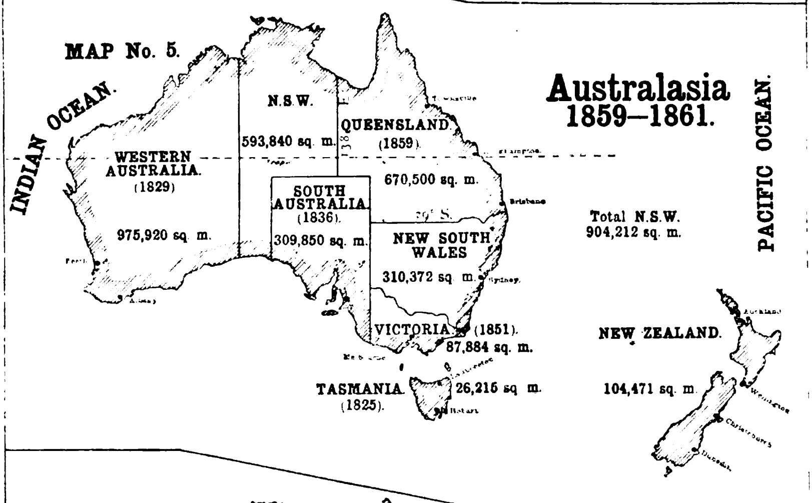
MAP No. 3.



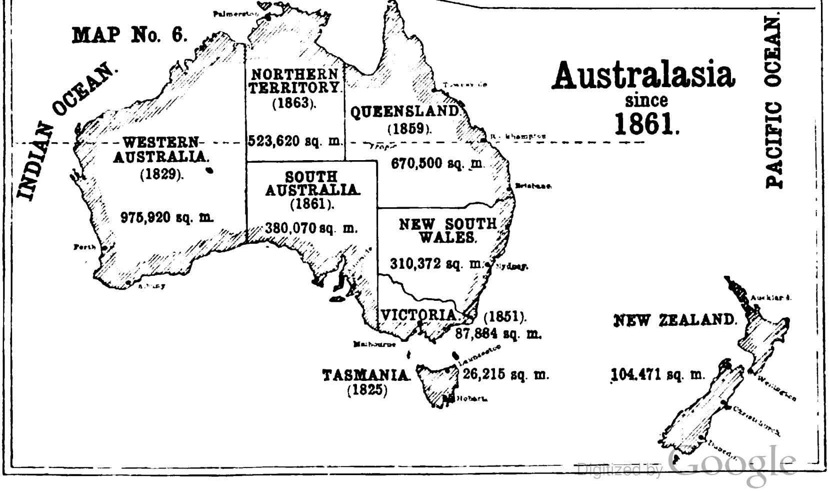
MAP No. 4.



MAP No. 5.



MAP No. 6.



12. **British New Guinea or Papua.**—Under the administration of the Commonwealth, but not included in it, is British New Guinea or *Papua*, finally annexed by the British Government in 1884, and for a number or years administered by the Queensland Government but transferred to the Commonwealth by proclamation on 1st September, 1906, under the authority of the Papua Act (Commonwealth) of 16th November, 1905. The area of Papua is about 90,540 square miles.

§ 4. General Description of Australia.

1. **Geographical Position.**—Australia lies in the Southern Hemisphere, an island continent, including Tasmania, of 2,974,581 square miles, the mainland alone being 2,948,366 square miles. Bounded on the west and east by the Indian and Pacific Oceans respectively, it lies between longitudes 113° 9′ E. and 153° 39′ E., while its northern and southern limits are the parallels of latitude 10° 41′ S. and 39° 8′ S., or including Tasmania, 43° 39′ S. On its north one finds the Timor and Arafura Seas and Torres Strait, on its south the Southern Ocean and Bass Strait.[1]

(i.) *Tropical and Temperate Regions.* Of the total area of Australia the lesser portion lies within the tropics. Assuming, as is usual, that the latitude of the Tropic of Capricorn is 23° 30′ S,[2] the areas within the tropical and temperate zones are approximately as follows:—

AREAS OF TROPICAL AND TEMPERATE REGIONS OF STATES WITHIN TROPICS.

	Queensland	Northern Territory.	Western Australia.	Total.
	Sq. miles.	Sq. miles.	Sq. miles.	Sq. miles.
Within Tropical Zone	359,000	426,320	364,000	1,149,320
Within Temperate Zone	311,500	97,300	611,920	1,020,720
Ratio of Tropical part to whole State ...	0.535	0.814	0.373	0.530
Ratio of Temperate part to whole State ...	0.465	0.186	0.627	0.470

Thus the tropical part is roughly about one half (.530) of the three territories mentioned above, or about five-thirteenths of the whole Commonwealth (0.386). See hereafter § 8.[1]

2. **Area of Australia compared with that of other Countries.**—That the area of Australia is greater than that of the United States of America, that it is four-fifths of that of Canada, that it is more than one-fourth of the area of the whole of the British Empire, that it is nearly three-fourths of the whole area of Europe, including Russia; that it is about 25 times as large as any one of the following, viz., the United Kingdom, Hungary, Norway, Austria, Italy, the Transvaal, and Ecuador, are facts which are adequately realised but seldom. It is this great size, taken together with the fact of the limited population, that gives to the problems of Australian development their unique character, and its clear comprehension is essential in any attempt to understand those problems.

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[1] The extreme points are "Steep Point" on the west, "Cape Byron" on the east, "Cape York" on the north, "Wilson's Promontory" on the south, or, if Tasmania be included, "South East Cape." The limits, according to the 1903-4 edition of "A Statistical Account of Australia and New Zealand," p. 2; and, according to Volume XXV. of the "Encyclopædia Britannica," p. 787; are respectively 113° 5′ E., 153° 16′ E., 10° 39′ S., and 39° 11½′ S., but these figures are obviously defective.

[2] Its correct value for 1907.0 is 23° 27′ 4″.98.

The relative magnitudes may be appreciated by a reference to the following table. which shews how large Australia is compared with the countries referred to, or *vice versa*. Thus, to take line 1, we see that Europe is about 1⅜ times (1.376) as large as Australia. or that Australia is about three-quarters (more accurately 0.727) of the area of Europe.

SIZE OF AUSTRALIA IN COMPARISON WITH THAT OF OTHER COUNTRIES.

Australian Commonwealth ... 2,974,581 square miles.

Country.	Area.	Australian Commonwealth in comparison with—	In comparison with Australia.
Continents, etc.—	sq. miles.		
Europe	4,093,000	.727	1.376
Asia	17,300,000	.172	5.82
Africa	11,556,000	.257	3.89
North America	9,200,000	.323	3.09
South America	6,850,000	.434	2.30
British Empire	11,433,000	.260	3.84
European—			
United Kingdom	121,390	24.5	.0408
Russia[1]	8,647,657	.344	2.91
Turkish Empire[2]	1,662,000	1.790	.559
Austria-Hungary[3]	241,333	12.32	.0812
German Empire	208,780	14.25	.0702
France	207,054	14.37	.0696
Spain	190,050	15.65	.0639
Sweden	172,876	17.21	.0581
Norway	124,130	24.00	.0417
Italy	110,550	26.9	.0372
Portugal	35,490	83.8	.0119
Greece	25,014	118.9	.00841
Switzerland ...	15,976	186.2	.00537
Denmark ...	15,592	190.8	.00524
Netherlands ...	12,648	235.2	.00425
Belgium	11,373	261.6	.00382
Asiatic—			
China	4,277,170	.695	1.438
India	1,766,517	1.684	.5939
Dutch E. Indies	736,400	4.04	.248
Persia	628,000	4.74	.211
Afghanistan ...	215,400	13.8	.0724
Japan[4]	175,700	16.9	.0591
African—			
Congo	900,000	3.30	.303
French Congo ...	680,000	4.37	.229
Angola	484,800	6.13	.163
Rhodesia (total)	431,000	6.90	1.449
African *(contd.)*—	sq. miles.		
German E. Afr.	384,180	7.74	.1292
Senegambia and Niger	370,000	8.04	.1244
Algeria	343,500	8.66	.1155
German S.W. Africa	322,450	9.23	.1084
Portuguese E. Africa	293,400	10.14	.0986
Cape Colony ...	276,995	10.74	.0931
Madagascar ...	228,000	13.05	.0767
Morocco	219,000	13.58	.0736
Abyssinia ...	200,000	14.87	.0672
British E. Afr. Prot.	177,100	16.80	.0595
Transvaal ...	117,732	25.3	.0396
Tunis	64,600	46.0	.0217
Orange R. Colony	50,392	59.0	.01694
Liberia	45,000	66.1	.01513
American—			
Canada	3,745,574	.794	1.259
United States ...	2,970,230	1.002	.998
Alaska	590,884	5.03	.1986
Mexico	316,125	9.41	.1063
Guatemala ...	48,290	61.6	.01623
Cuba	44,000	67.6	.01479
Brazil	3,218,991	.924	1.082
Argentina ...	1,135,840	2.62	.382
Bolivia	708,195	4.20	.238
Peru	695,733	4.27	.234
Columbia ...	444,980	6.68	.1496
Venezuela ...	364,000	8.17	.1224
Chile	307,620	9.67	.1034
Ecuador	116,000	25.6	.1390
Paraguay... ...	98,000	30.3	.0330
British Guiana...	90,277	32.9	.0364
Uruguay	72,210	41.2	.0243

3. **Relative Size of Political Subdivisions.**—As already stated, Australia is divided into six States, the areas of which, in relation to one another and to the total of Australia, are shewn in the following table, viz., a table of double entry, which, therefore, gives the ratio of the area of each State to that of every other State. as well as to that of the whole of Australia. This is similar to the preceding table.

---

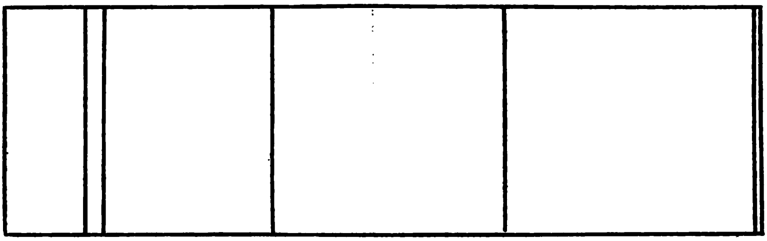
1. Including Russia in Asia.
2. Including Asiatic and African Possessions.
3. Excluding Bosnia and Herzegovina.
4. With Formosa, the Pescadores and Southern Sakhalin (Karafuto).

RELATIVE SIZES OF STATES AND COMMONWEALTH.

State.	Area.	Ratio which the Area of each State bears to that of other States and Commonwealth.						
		N.S.W.	Victoria.	Q'land.	S.A. (Total.)	W. Aust.	Tas.	C'wlth.
	Sq. miles.							
N.S.W. ...	310,372	1.000	3.532	0.463	0.344	0.318	11.840	0.104
Victoria ...	87,884	0.283	1.000	0.131	0.097	0.090	3.352	0.030
Queensland	670,500	2.160	7.629	1.000	0.742	0.687	25.577	0.225
S.A. (total)	903,690	2.912	10.283	1.348	1.000	0.926	34.472	0.304
S.A. (proper)	(380,070)	(1.225)	(4.325)	(0.567)	(0.421)	(0.389)	(14.498)	(0.128)
N. Terr ...	(523,620)	(1.687)	(5.958)	(0.781)	(0.579)	(0.587)	(19.974)	(0.176)
W. Aust. ...	975,920	3.144	11.105	1.455	1.080	1.000	37.228	0.328
Tasmania ...	26,215	0.085	0.298	0.039	0.029	0.027	1.000	0.009
Total ...	2,974,581	9.584	33.847	4.436	3.292	3.048	113.469	1.000

Thus, looking at the top line, New South Wales is seen to be over three-and-a-half times ar large as Victoria (3.532) and less than one-half the size of Queensland (0.463); or again, looking at the bottom line, the Commonwealth is shewn to be more than nine-and-a-half times as large as New South Wales (9.584), and nearly thirty-four times as large as Victoria (33.847).

These relative magnitudes are shewn in the small diagram below. It may be added that Papua (or British New Guinea), with its area of 90,540 square miles, is 0.030 of the area of the Commonwealth.



4. **Coastal Configuration.**—There are no striking features in the configuration of the coast: the most remarkable indentations are the Gulf of Carpentaria on the north and the Great Australian Bight on the south. The York Peninsula on the extreme north is the only other remarkable feature in the outline. It is consequently compact in form.

(i.) *Coast-line.* The lengths of coast-line, exclusive of minor indentations, both of each State and of the whole continent, are shewn in the following Table;—

SQUARE MILES OF TERRITORY PER MILE OF COAST-LINE.

State.	Coast-line.	Area ÷ Coast-line	State.	Coast-line.	Area ÷ Coast-line.
	Miles.	Sq. miles.		Miles	Sq. miles.
New South Wales...	700	443	South Australia ...	1,540	247
Victoria	680	129	Western Australia	4,350	224
Queensland ...	3,000	223	Continent[1] ...	11,310	261
Northern Territory	1,040	503	Tasmania ...	900	29

---

[1] Area 2,948,366 square miles.

For the entire Commonwealth this gives a coast-line of 12,210 miles, and an average of 244 square miles for one mile of coast-line. According to Strelbitski, Europe has only 75 square miles of area to each mile of coast-line, and, according to recent figures, England and Wales have only one-third of this, viz., 25 square miles.

(ii.) *Features of the Coast-line.* It is not the function of this Year Book to furnish in any one number a complete geographical account of Australia, but each year the most complete available information will be given of some special geographical element.[1] In this number an enumeration of the features of the coast-line is selected, but in the next Year Book this will not be repeated; in its place the Rivers of Australia will be enumerated. In regard to the Australian coast it may be said that, while smaller indentations are fairly numerous, few are of large size. Starting with Queensland, at the Gulf of Carpentaria, and passing round the continent in the direction of the motion indicated by the hands of a watch, the indentations and prominent features to be met with, the associated towns or villages, etc., and the islands, are as shewn in the following extended[2] table:—

THE COAST-LINE OF THE COMMONWEALTH OF AUSTRALIA.

Together with the Cities, Towns, and Villages at or near the Coast.

QUEENSLAND.

- Gulf of Carpentaria—
  - Point Bayly
  - Point Parker
  - Point Tarrant
  - Kangaroo Point
  - BURKETOWN
  - Point Gore
  - Disaster Inlet
  - Morning Inlet
  - NORMANTON
  - Accident Inlet
  - Cape Keerweer (Turn Again)
  - False Pera Head
  - Pera Head
  - Albatross Bay
  - Point Urquhart
  - Point Kerr
  - Duyfken Point
  - Tullamaringa (Cullen Point)
  - MAPOON
  - Port Musgrave
  - Vrilya Point
- Endeavour Strait—
  - Simpson Bay
  - Peak Point
  - Cape York
- Albany Pass
- Newcastle Bay
- Turtle Head
- Orford Bay
- Orford Ness
- False Orford Ness
- Shelburne Bay—
  - Double Point
  - Round Point
- Margaret Bay
- Cape Grenville
- Temple Bay
- Second Stony Point
- Fair Cape
- Weymouth Bay
- Cape Weymouth
- Lloyd Bay
- Cape Direction
- Second Red Rock Point
- First Red Rock Point
- Cape Sidmouth
- Claremont Point
- Princess Charlotte Bay
- Bathurst Head
- Bathurst Bay
- Cape Melville
- North Bay Point
- Ninian Bay
- Barrow Point
- Cape Bowen
- Red Point
- Murdoch Point
- Lookout Point
- Cape Flattery
- Cape Bedford
- COOKTOWN
- Monkhouse Point
- Archer Point
- Weary Bay
- Cape Tribulation
- Island Point
- PORT DOUGLAS
- Trinity Bay—
  - Double Point
  - Trinity Harbour
- CAIRNS
- False Cape
- Cape Grafton
- Palmer Point
- Woolanmaroo
- Bramston Point
- Cooper Point
- Musgrave
- Flying Fish Point
- Gladys Inlet
- GERALDTON
- Mourilyan
- Mourilyan Harbour
- Hayter Point
- Double Point
- Clump Point
- Shanter Point
- Kennedy Bay
- Warringha
- Rockingham Bay—
  - Port Hinchinbrook
  - CARDWELL
  - Dalrymple Gap
  - Rockingham Channel
- HALIFAX
- Dungeness
- INGHAM
- Halifax Bay
- Cleveland Bay
- TOWNSVILLE
- Cape Cleveland
- Bowling Green Bay
- Cape Bowling Green
- AYR
- Upstart Bay
- Cape Upstart
- Abbot Bay
- Abbot Point
- Cape Edgecumbe
- Edgecumbe Bay
- BOWEN
- Cape Gloucester
- George Point
- Whitsunday Passage—
  - Grimston Point
  - Pioneer Point
  - Point Molle
  - Round Head
- Cape Conway
- Repulse Bay
- Midge Point
- Port Newry
- Cape Hillsborough
- Shoal Point
- Slade Point
- MACKAY
- Dudgeon Point
- Hay Point
- Victor Point
- Coral Point
- Sarina Inlet
- Freshwater Point
- Cape Palmerston
- Notch Point
- Broad Sound
- ST. LAWRENCE
- Charon Point
- Island Bluff
- Thirsty Sound
- Stanage Point
- Broome Head
- Shoalwater Bay
- Strong Tide Passage
- Fine Trees Point
- Island Head
- Pearl Bay
- North-east Point
- Port Clinton
- Cape Clinton
- Cliff Point
- Cape Manifold
- Water Park Point
- Wreck Point
- Double Head
- Emu Point
- EMU PARK

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[1] In the course of several years the geographical information given will thus be of a very complete character.

[2] The information is given in much greater detail than is possible on any but the largest maps, and is, therefore, not generally available. The series of Year Books will thus furnish detailed geographical information of the several geographical features of Australia.

- Keppel Bay—
  - ROCKHAMPTON
  - Cattle Point
- Port Curtis
- GLADSTONE
- Rodd Bay—
  - Norton Point
- Richards' Point
- Bustard Head
- Round Hill Head
- Burnett Head
- BUNDABERG
- Hervey Bay
  - Vernon Point
  - Great Sandy Island Strait
  - MARYBOROUGH
  - Inskip Point
- Wide Bay
- Double Island Point
- Laguna Bay
- Noosa Head
- GYMPIE
- Point Arkwright
- Point Cartwright
- Currimundri Cape
- CALOUNDRA
- Toorbul Point
- CABOOLTURE
- Deception Bay
- Castlereagh (Reef) Point
- Redcliffe Point
- HUMPY BONG
- Moreton Bay—
  - Woody Point
  - Bramble Bay
  - SANDGATE
  - Luggage Point
  - BRISBANE
  - Waterloo Bay
  - Wellington Point
  - Raby Bay
  - CLEVELAND
  - Redland Bay
- SOUTHPORT
- COOLANGATTA
- Point Danger

ISLANDS.

- In Gulf of Carpentaria—
  - Wellesley Islands—
    - Mornington Island
      - Cape Van Diemen
    - Rooky I.
    - Pisonia I.
    - Bountiful I.
  - Forsyth Group—
    - Bayley I.
    - Pain's I.
    - Forsyth I.
  - Bentinck Group—
    - Allen I.
    - Horseshoe I.
    - Bentinck I.
    - Sweers I.
    - Carnarvon I.
    - Fowler I.
- In Torres Straits—
  - Innumerable small islands, of which the following are in Endeavour Strait and immediately to the north of it:—
    - Red Wallis I.
    - Woody Wallis I.
    - Booby I.
    - Prince of Wales I.
    - Thursday I.
    - Horn I.—
      - Port Kennedy
      - Papou Point
    - Friday I.
    - Goode I.
    - Wednesday I.
    - Hammond I.
    - Tuesday I.
    - Barn I.
    - Bed I.
    - Dayman I.
    - Possession I.
    - Higo I.
    - Albany I.
- Inside Great Barrier Reef—
  - Dugong I.
  - Bushy I.
  - Cairncross I.
  - Macarthur I.
  - Bird I.
  - Sir Charles Hardy Islands
  - Home Islands
  - Haggerstone Islands
  - Piper Islands
  - Forbes Islands
  - Quoin I.
  - Sandy I.
  - Beacon I.
  - Pelican I.
  - Flinders Group
    - East Flinders
  - Pipoa I.
  - Howick Group
  - Turtle Group
  - Lizard I.
  - Fitzroy I.
  - Dunk I.
  - Goold I.
  - Brook I.
  - Hinchinbrook I.—
    - Hecate Point
    - Cape Richards
    - Shepherd Bay
    - Cape Sandwich
    - Ramsay Bay
    - Hillock Point
    - George Point
  - Palm Isles—
    - Orpheus I.
    - Great Palm I.
    - Pandora Reef
  - Magnetic I.
  - Holborn I.
  - Nares I.
  - Gloucester I.
  - Whitsunday Group—
    - Hook I.
    - Whitsunday I.
    - Hamilton I.
  - Cumberland Isles—
    - Lindeman I.
    - Shaw I.
    - Sir James Smith Group
  - Beverley Group—
    - Prudhoe I.
  - Flat Isles.
  - Northumberland Isles—
    - Percy Isles
      - Howard Point
    - Hixson I.
    - Berwick I.
  - Long Island
    - North Point
  - Quail Island
    - Pier Head
  - Cannibal Group—
    - Leicester I.
    - Townshend I.
      - Cape Townshend
  - North Keppel I.
  - Great Keppel I.
  - Capricorn Group—
    - Bunker Group
    - Lady Elliot I.
  - Great Sandy (Fraser) I.—
    - Rooney Point
    - Sandy Cape
    - Waddy Point
    - Indian Head
    - Hook Point
    - Blackfellow's Point
    - Sandy Point
- In Moreton Bay—
  - Briby I.
  - Moreton I.—
    - Comboyouro Point
    - North Point
    - Cape Moreton
  - Stradbroke I.
    - Point Lookout
  - Mud I.
  - St. Helena
  - Quarantine I.
    - Innes I.
    - Macleay I.
    - Russell I.

NEW SOUTH WALES.

- Point Danger
- Tweed Heads
- Fingal Point
- MURWILLUMBAH
- Sutherland Point
- Norries Head
- Hastings Point
- Byron Bay
- BYRON BAY
- Cape Byron
- Broken Head
- Lennox Head
- Sand Point
- Richmond Heads
  - North Head
  - BALLINA
  - South Head
- Evans Head
- Wooded Head
- Clarence Heads—
  - North Head
  - ILUKA
  - South Head
  - YAMBA
- Angourie Point
- Buchanan's Head
- Cakora Point
- Sandon Bluffs
- Tree Point
- Bare Point
- Green Bluff
- WOOLGOOLGA
- Bare Bluff
- Rocky Bluff
- White Bluff
- Charlesworth Bay
- Flat Rock
- Coff's Harbour
- COFF'S HARBOUR
- BELLINGEN
- Wononah Head
- North Head
- NAMBUCCA
- BOWRA
- MACKSVILLE
- Scott's Head
- Grassy Head (Macleay)
- Trial Bay
- ARAKOON
- Lagger's Point
- Smoky Cape
- Korogoro Point
- Crescent Head
- Point Plomer
- Port Macquarie (Hastings)
- PORT MACQUARIE
- Tacking Point
- Grant's Head
- Camden Haven
- CAMDEN HAVEN
- Diamond (Indian) Head
- Crowdy Bay
- Crowdy Head
- Harrington Inlet (Manning)
- HARRINGTON
- Farquhar Inlet (Manning)
- Wallaby Point
- Halliday's Point
- Wallis Lake
- TUNCURRY
- FORSTER
- Cape Hawke
- Charlotte Head
- Boomerang Point
- Myall Lakes
- Sugarloaf Point
- Treachery Head
- Dark Point
- Port Stephens
- TERAMBY
- Toomeree Head
- Stephens Point
- Fingal Head
- Anna Bay
- Morna Head

- Port Hunter
- STOCKTON
- Nobby's Head
- NEWCASTLE
- Little Red Head
- Red Head
- Lake Macquarie
- KAHIBAH
- BELMONT
- Cabbage Tree Harbour
- Bungaree Norah Point
- Soldier's Point
- Tuggerah Lakes
- Wyrrabalong
- Tarragal Harbour
- Kurrawyba
- Bulbararing
- Mourawaring
- Bombi
- Box (Hawke) Head
- Broken Bay (Hawkesbury)
- GOSFORD
- Barranjuey
- Little Head
- South Head
- Hole in the Wall
- Bungan Head
- Bulgolo Head
- NEWPORT
- Turimetta Head
- NARRABEEN
- Long Reef
- Deewhy Head
- Curl Curl
- MANLY
- Blue Fish
- Port Jackson Heads—
    - North Head
    - SYDNEY
    - Inner South Head
    - Outer South Head
- Ben Buckler
- Bondi Bay
- Coogee Bay
- Maroubra Bay
- Long Bay
- Little Bay
- Botany Heads—
    - Cape Banks
    - LA PEROUSE
    - Cape Solander
    - KURNELL
- Port Hacking
- Big Jibbon Point
- Marley Beach
- Wattamolla
- Curracurrong
- Garie
- Bulgo
- Coal Cliff
- CLIFTON
- Long Point
- THIRROUL
- Bulli
- BULLI
- Bellambi Point
- BELLAMBI
- Towradgi Point
- Wollongong Cove
- WOLLONGONG
- Red Point
- Lake Illawarra
- DAPTO
- ALBION PARK
- Barrack Point
- Port Kembla
- SHELL HARBOUR
- Bass Point
- Kiama Harbour
- KIAMA
- Gerringong Harbour
- GERRINGONG
- Black Head
- Shoalhaven Heads
- NOWRA
- (Greenwell Point)
- Kinghorn Head
- Crookhaven Bight
- Beecroft Head
- Crocodile Head
- Perpendicular Head
- Jervis Bay
- HUSKISSON
- St. George's Head
- Wreck Bay
- Sussex Inlet—
    - St. George's Basin
    - WANDRAWANDIAN
- Red Point
- Ulladulla Harbour
- ULLADULLA
- Warden Head
- Burrill Inlet
- Lagoon Head
- Termeil Point
- O'Hara Head
- Point Upright
- Wasp Head
- Clyde Heads—
    - North Head
    - Bateman's Bay
    - BATEMAN
    - NELLIGEN
    - South Head
- Burrewarra Point
- BROULEE
- Moruya Heads
- MORUYA
- Toragy Point
- Congo Point
- Mullinburra Point
- Binge Binge Point
- COILA
- Tuross River
- BODALLA
- Point Marks
- Lake Birroul
- Lake Mummuga
- Kianga Point
- Wagonga River
- WAGONGA
- NOOROOMA
- Waramba Rocks
- Nugget Head
- Corunna Lake
- CORUNNA
- Boat Harbour Point
- Cape Dromedary
- TILBA
- Wallaga Lake
- COBARGO
- Murruna Point
- Bermaguee
- Baragoot Rocks
- Baragoot Point
- Baragga Point
- Goalen Point
- Bunga Head
- Mimosa Rocks
- Bengurmu Point
- Bithry Inlet
- Tanja Lagoon
- Baronda Head
- Wajurda Point
- Mogareka Inlet
- BEGA
- Tathra Head
- TATHRA
- Kangarutha Point
- Turingal Rock
- Tura Head
- WOLUMLA
- Panbula Inlet
- Merrimbula Point
- Merrimbula Lake
- MERRIMBULA
- PANBULA
- Toalla (Haycock) Point
- Quoraburagun
- Woranga (North) Head
- Twofold Bay
- EDEN
- KIAH
- BOYDTOWN
- Red Point
- Mowarry Point
- Bittangabee Creek
- Green Cape
- Disaster Bay
- Black Head
- Nadgee Point
- Cape Howe

ISLANDS.

- Cook Island
- Juan and Julia
- Solitary Islands—
    - North Rock
    - North-west Solitary
    - South Solitary
    - Black Rock
    - Split Solitary
- Mermaid Reef
- Seal Rocks
- Broughton I.
- Cabbage Tree I.
- Boondelbah I.
- Moon (Green) I.
- Bird I.
- Tom Thumb I.
- Five Islands
- Windang I.
- Green I.
- Crampton I.
- Stokes I.
- Brush I.
- O'Hara I.
- Grasshopper I.
- Tollgate I.
- Montagu I.
- Lord Howe Islands—
    - Phillip Bluff
    - Collins Cove
    - Stevens Point
    - Brodie's Point
    - Ross Bay
    - Mutton Bird Point
    - Rocky Point
    - Edmanoch Point
    - East Point
    - Cut Grass Point
    - George's Bay
    - Sugarloaf Point
    - Red Point
    - King Point
    - Prince William Henry Bay
    - Signal Point
    - Hunter Bay
    - Dawson's Point
    - Callam (North) Bay
    - Phillip Point
    - Sugarloaf I.
    - Roach (Admiralty) I.
    - North I.
    - Mutton Bird I.
    - Gower I.
    - Blackborn (Goat) I.

VICTORIA.

- Cape Howe
- Conference Point
- Mallacoota Inlet
- Bastion Point
- Little Ram Head
- Sand Patch Point
- Wingan Point
- Wingan Inlet
- Ram Head
- Petrel Point
- Cape Everard
- Tamboon Inlet
- Sydenham Inlet
- Pearl Point
- Cape Conran
- Point Ricardo
- Lake Tyers
- Red Bluff
- Lakes Entrance—
    - Lake King
    - BAIRNSDALE
    - Lake Victoria
    - Lake Wellington
    - SALE
    - Lake Reeve
    - Lake Reeves
    - Lake Denison
- Shoal Inlet
- Port Albert
- ALBERTON
- Bentley Harbour
- Corner Inlet

- WELSHPOOL
- BOWEN
- Sealer's Cove
- Refuge Cove
- Waterloo Bay
- Wilson's Promontory
- South-west Point
- Oberon Bay
- Norman Bay
- Waratah Bay
- Grinder Point
- Cape Liptrap
- Venus Bay
- Anderson's Inlet
- Point Norman
- Cape Paterson
- Griffith Point
- Western Port—
  - Settlement Point
  - Inner Western Passage—
    - HASTINGS
    - STONY POINT
  - Western Passage—
    - Sandy Point
    - West Head
    - FLINDERS
- Cape Schanck
- FINGAL
- Point Nepean
- Port Phillip Bay—
  - Observatory Point
  - Point King
  - SORRENTO
  - Dromana Bay
  - Balcombe Bay
  - Snapper Point
  - MORNINGTON
  - Davy Point
  - MORDIALLOC
  - Point Barring
  - Red Bluff
  - Picnic Point
  - Point Ballygyl
  - BRIGHTON
  - Hobson's Bay—
    - MELBOURNE
  - Point Cooke
  - Kirk Point
  - Point Wilson
  - Corio Bay—
    - GEELONG
    - Point Henry
    - Geelong Outer Harbour
  - PORTARLINGTON
  - Point Bertram
  - ST. LEONARDS
  - Swan Bay
  - QUEENSCLIFF
- Point Lonsdale
- Barwon Heads
- Point Flinders
- Point Addis
- Point Road Knight
- Airey's Inlet
- Point Castries
- Loutit Bay
- LORNE
- Point Grey
- The Spit
- Point Sturt
- Point Hawdon
- Addis Bay
- Cape Patton
- Apollo Bay
- Point Haley
- Blanket Bay
- Point Lewis
- Point Franklin
- Cape Otway
- Point Flinders
- Castle Cove
- Rotton Point
- Moonlight Head
- Pebble Point
- Point Ronald
- Port Campo
- Point Hesse
- Bay of Martyrs
- Point Buttress
- Childers Cove
- Warrnambool Bay
- WARRNAMBOOL
- Armstrong Bay
- Belfast Bay
- PORT FAIRY
- Portland Bay
  - Whaler Point
- PORTLAND
- Point Danger
- Cape Sir William Grant
- Nelson Bay
- Cape Nelson
- Bridgewater Bay
- Cape Bridgewater
- Discovery Bay

ISLANDS.

- Gabo I.
- In Corner Inlet—
  - Sunday I.
  - Snake I.
- Hogan I.
- Rotondo I.
- Anser I.
- In Western Port—
  - Phillip I.—
    - Cape Woolamai
    - NEWHAVEN
    - COWES
    - VENTNOR
    - RHYLE
    - Pyramid Point
    - Point Grant
  - French I.
- Swan I.
- Lady Julia Percy I.

SOUTH AUSTRALIA.

- Discovery Bay
- Green Point
- Brown Bay
- Danger Point
- Riddoch Bay
- Flint Point
- McDonnell Bay
- PORT McDONNELL
- Cape Northumberland
- Blanche Bay
- Middle Point
- Umpherstone Bay
- Douglas Point
- Pelican Point
- Cape Banks
- Cape Buffon
- Rivoli Bay
- GREYTOWN
- BEACHPORT
- Point Connor
- Cape Martin
- Point William
- Nora Creina Bay
- Cape Rabelais
- Cape Lannes
- Cape Dombey
- Guichen Bay
- ROBE
- Cape Thomas
- Cape Jaffa
- Lacepede Bay
- KINGSTON
- PORT CAROLINE
- Murray Mouth—
  - Lake Alexandrina
    - Coorong
    - Loveday Bay
    - Point Macleay
    - Albert Passage
    - Lake Albert—
      - Reedy Point
      - Rumply Point
      - Warringee Point
    - MENINGEE
    - Point Malcolm
    - Low Point
    - WELLINGTON
    - MILLEWA
    - Tolderol Point
    - MILANG
    - Point Sturt
    - GOOLWA
- Encounter Bay—
  - PORT ELLIOTT
  - Freeman's Nob
  - PORT VICTOR
  - Newland Head
  - Tunk Head
  - Porpoise Head
- Backstairs Passage
- Lands End
- Cape Jervis
- Gulf St. Vincent—
  - Round Head
  - Rapid Bay
  - YANKALILLA
  - Carrinkalinga Head
  - Aldinga Bay
  - ALDINGA
  - Snapper Point
  - Port Willunga
  - WILLUNGA
  - Blanche Point
  - Port Noarlunga
  - NOARLUNGA
  - Holdfast Bay
  - BRIGHTON
  - GLENELG
  - HENLEY BEACH
  - GRANGE
  - SEMAPHORE
  - LARGS BAY
  - Port River
  - PORT ADELAIDE
  - ADELAIDE
  - Port Gawler
  - Sandy Point
  - PORT WAKEFIELD
  - Pelican Bay
  - Mangrove Point
  - Parara Point
  - Muloowurtie Point
  - Pine Point
  - Port Alfred
  - Black Point
  - Dowcer's Bluff
  - Streak Point
  - PORT VINCENT
  - Surveyor's Point
  - Beach Point
  - Oyster Bay
  - STANSBURY
  - Wool Bay
  - PICKERING
  - Giles' Point
  - Salt Creek Bay
  - EDITHBURGH
  - Point De Mole
  - Hungry Point
  - Sultana Point
  - Wattle Point
  - Troubridge Point
- Investigator Strait—
  - Waterloo Bay
  - Point Gilbert
  - Sturt Bay
  - Point Davenport
  - Foul Bay
  - Point Yorke
  - Hillock Point
  - Marion Bay
  - Rhina Head
  - Cape Spencer
- Spencer's Gulf—
  - Reef Head
  - West Cape
  - Pondalowie Bay
  - Royston Head
  - Point Margaret
  - Constance Bay
  - Daly Bay
  - Point Annie
  - Deberg Point
  - Dunn's Point
  - Corny Point
  - Point Souttar
  - Hardwicke Bay
  - Point Turton
  - PORT MINLACOWIE
  - Brown Point
  - PORT RICKABY
  - PORT VICTORIA
  - Point Pearce

  Island Point
  Reef Point
  Point Warenne
  BALGOWAN
  Cape Elizabeth
  PORT HUGHES
  PORT MOONTA
  Warburton Point
  Wallaroo Bay
  WALLAROO
  Point Riley
  Myponie Point
  Tickera Bay
  TICKERA
  Webling Point
  Mundoora Arm
  PORT BROUGHTON
  Mundoora Bay
  MUNDOORA
  Woods' Point
  Jarrold Point
  Germein Bay
  PORT PIRIE
  PORT GERMEIN
  Ward's Point
  Red Cliff Point
  Port Paterson
  PORT AUGUSTA
  Brown's Point
  Curlew Point
  Commissariat Point
  Blanche Harbour
  Two Hummocks Point
  Douglas Point
  Crag Point
  Backy's Point
  Backy's Bay
  Lowly Point
  Stony Point
  Black Point
  False Bay
  Plank Point
  Shoalwater Point
  Point Victoria
  Franklin Harbour
  COWELL
  Germein Point
  Point Price
  Salt Creek Cove
  Arno Bay
  Cape Driver
  Dutton Bay
  Mottled Cove
  Cape Burr
  Cape Hardy
  Lipson's Cove
  Tumby (Hervey's) Bay
  TUMBY
  Red Cliff
  Point Bolingbroke
  Louth Bay
  Point Warna
  Point Boston
  Boston Bay
  PORT LINCOLN
  Point Kirton
  Porter's Bay
  Port Lincoln Proper
  Surfleet Point
  Spalding Cove
  Cape Donnington
  Point Maclaren
  Shag Cove
  Memory Cove
  Thorny Passage
  Cape Catastrophe
West Point
Sleaford Bay
Cape Wiles
Shoal Point
Point Avoid
Avoid Bay
Point Whidbey
Reef Point
Point Sir Isaac
Coffin's Bay—
  Point Longnose
  Port Douglas
  Kollidie Bay
  Mount Dutton Bay
Point Drummond
Hall's Bay
Wellington Point
Waterloo Bay
ELLISTON
BRAMFIELD
Wellesley Point
Cape Finniss
Boat Cove
Anxious Bay
Venus Bay
PARKIN
Point Weyland
Beard's Bay
Cape Radstock
Cape Blanche
Sceale's Bay
Point Westall
Corvisart Bay
Cape Bauer
Streaky Bay—
  Blanche Port
  FLINDERS
  Point Lindsay
  Point De Mole
  Gascoigne Bay
  Point Collinson
Edward Bay
Point Brown
St. Mary's Bay
Point Dillon
Cape Missiessy
Smoky Bay
  Laura Bay
Cape D'Estree
Denial Bay—
  Cape Vivonne
  Cape Thevenard
  Murat Bay
  Cape Beaufort
  Tourville Bay
  Point Peter
Point James
Rocky Point
Point Bell
Port Irvine
Point Sinclair
Clare Bay
Fowler's Bay
  PORT EYRE
  Yalata
Point Fowler
Scott Bay
Scott Point
Cape Nuyts
Cape Adieu
"Head of Bight"

ISLANDS.

In Guichen Bay—
  Godfrey's Islands
In Lake Alexandrina—
  Tanwirch Island
  Reedy Island
  Hindmarsh Island
    and others
In Encounter Bay—
  Granite Island
  Wright's Island
  West Island
In Backstairs Passage
  The Pages
Kangaroo Island—
  Cape Willoughby
  Cape Hart
  False Cape
  Pennington Bay
  Point Reynolds
  Flour Cask Bay
  D'Estree Bay
  Point Tinline
  Cape Linois
  Cape Gantheaume
  Vivonne Bay
  Point Ellen
  Cape Kersaint
  Cape Bouguer
  Hanson Bay
  Cape Younghusband
  Remarkable Rock
  Cape de Couédie
  Maupertuis Bay
  Cape Bédout
  West Bay
  Cape Borda
  Cape Torrens
  Cape Forbin
  Kangaroo Beach
  Snug Cove
  Seal Beach
  Snelling's Beach
  Cape Dutton
  Stokes' Bay
  Knob Point
  White Cliff
  Cape Cassini
  Dashwood Bay
  Smith's Bay
  Cape D'Estaing
  Emu Bay
  White Point
  Point Marsden
  Shoal Point
  Bay of Shoals
  Kingscote Point
  KINGSCOTE
  Nepean Bay
    BROWNLOW
    Western Cove
    Eastern Cove
    American River
    SAPPHIRE TOWN
    American Beach
    AMERICAN BEACH
    Christmas Cove
  Company Beach
  Kangaroo Head
  Hog Point
  PENNESHAW
  HOG POINT
  Cuttlefish Bay
  Cape Coutts
  Antechamber Bay
  Cape St. Albans
  Pink Bay
Torrens Island
Troubridge Shoal
Althorpe Islands
Gambier Islands
  Wedge I.
Neptune Islands
  North and South Neptunes
  Thistle Island
    Waterhouse Point
In Thorny Passage—
  Taylor's Island
    and others
Boston Island
Wauraltee Island—
  Cliff Point
Sir Joseph Banks Group—
  Spilsby Island
    and others
Whidbey Islands
Flinders Island
Nuyts' Archipelago—
  St. Peter's Island
    and others
Isles of St. Francis—
  St. Francis Island
  Massillon Island
    and others

WESTERN AUSTRALIA.

Wilson Bluff
EUCLA
Noonaera
Red Rock Point
Scorpion Bight
EYRE
Twilight Cove
Point Dover
Point Culver
Rocky Point
Israelite Bay
ISRAELITE BAY
Point Dempster
Point Malcolm

- Cape Paisley
- Sandy Bight
- Cape Arid
- Tagon Head
- Duke of Orleans Bay
- Point Cheyne
- Rossiter Harbour
- Lucky Bay
- Cape Le Grande
- Esperance Bay—
  - ESPERANCE
  - Rossiter Bay
  - Dempster Head
- Butty's Harbour
- Barker Inlet
- Fanny Cove
- Shoal Cape
- Stokes Inlet
- Starvation Boat Harbour
- Mary Ann Haven
- HOPETOUN
- Culham Inlet
- Point Charles
- Point Ann
- Gordon Inlet
- Doubtful Island Bay
- Fishery Cove
- Hood Point
- Bremer Bay
- Point Black
- Point Gordon
- Point Henry
- Dillon Bay
- Cape Knob
- Point Irby
- Cheyne's Bay
- Cape Riche
- Lookout Point
- Two People Bay
- Cape Vancouver
- King George Sound—
  - Oyster Harbour
  - Princess Royal Harbour
  - ALBANY
- Bald Head
- Peak Head
- Tor Bay
- Torbay Head
- West Cape Howe
- Knapp's Head
- Ratcliffe Bay—
  - Wilson's Inlet
- DENMARK
- Wilson's Head
- Williams' Bay
- Edward Point
- Point Hillier
- Boat Harbour
- Foul Bay
- Irwin's Inlet
- Point Irwin
- Nornalup Inlet
- Rocky Head
- Point Nuyts
- Cliffy Head
- Brookes' Inlet
- West Cliff Point
- D'Entrecasteaux Point
- Black Head
- Black Point
- Flinders Bay—
  - Matthew Point
  - Hardey Inlet
  - AUGUSTA
- Cape Leeuwin
- Cape Hamelin
- Hamelin Bay
- KARRIDALE
- Cape Freycinet
- Cape Mentelle
- Cowaranup Point
- Cowaranup Bay
- Cape Clairault
- YALLINGUP CAVES
- Cape Naturaliste
- Geographe Bay—
  - Bunker Bay
  - Eagle Bay
  - Dunn Bay
  - Toby Inlet
  - BUSSELTON
  - Vasse Inlet
  - Koombana Bay
  - BUNBURY
- Cape Bouvard
- Point Robert
- Peel's Inlet—
  - Harvey Estuary
- Warnbro Sound
- Cape Peron
- ROCKINGHAM
- Cockburn Sound
- Owen Anchorage
- Gage Roads
- FREMANTLE
- PERTH
- Wreck Point
- Wabling Head
- Cape Leschenault
- Ledge Point
- Island Point
- Jurien Bay
- North Point
- Green Head
- Nobby Head
- Freshwater Point
- Cliff Head
- Leander Point
- DONGARA
- Port Grey
- Champion Bay
- GERALDTON
- Port Gregory
- Shoal Point
- Red Point
- Gantheaume Bay
- Epineux (False) Entrance
- Shark Bay—
  - Steep Point
  - South Passage
  - Blind Strait
  - Useless Inlet
  - Boathaven Loop
  - Freycinet Estuary—
    - Depuch Loop
    - Disappointment Loop
  - Eagle Bluff
  - Lagoon Point
  - Denham Sound—
    - Cape Lesueur
  - Cape Peron
  - Herold Bight
  - Hopeless Reach
  - Eastern Bluff
  - Monkey Mia
  - Lharidon Bight
  - Petit Point
  - Hamelin Pool—
    - Flint Cliff
  - Long Point
  - Greenough Point
- Geographe Channel
- CARNARVON
- Point Charles
- Cape Cuvier
- Cape Farquhar
- Point Anderson
- Maud Point
- Chabjuwardoo Bay
- Black Rock
- Point Cloates
- Low Point
- False Island Point
- Vlaming Head
- North West Cape
- Exmouth Gulf—
  - Bay of Rest
- Cape Locker
- ONSLOW
- Mary Anne Point
- Cape Cornie
- Port Weld
- Point James
- Cape Preston
- Regnard Bay
- Hampton Harbour
- Nickol Bay
- Cape Lambert
- Port Walcott
- COSSACK
- ROEBURNE
- Cape Thouin
- Oyster Inlet
- Port Hedland
- PORT HEDLAND
- Hunt Point
- Spit Point
- Breaker Inlet
- Mystery Landing
- Poissonier Point
- Cape Jaubert
- Geoffroy Bay
- Cape Frezier
- Cape Dahamel
- Tryon Point
- Cape Bossut
- Lagrange Bay
- Cape Latouche-Treville
- Cape Courdon
- Cape Villaret
- Roebuck Bay
- BROOME
- Entrance Point
- Point Gantheaume
- Cape Boileau
- Point Coulomb
- Carnot Bay
- Cape Baskerville
- Sandy Point
- Beagle Bay
- Point Emerian
- Pender Bay
- Cape Borda
- Cape Lévêque
- Swan Point
- King Sound—
  - Cygnet Bay
  - Point Cunningham
  - Goodenough Bay
  - Foul Point
  - Carlisle Head
  - Disaster Bay
  - Escape Point
  - DERBY
  - Point Torment
  - Stokes Bay
  - Point Usborne
  - Cone Bay
- Yampi Sound
- Collier Bay—
  - Walcott Inlet
  - High Bluff
  - Eagle Point
  - Raft Point
  - Doubtful Bay
  - George Water
- Point Hall
- Camden Sound
- Brecknock Harbour
- Brunswick Bay—
  - Careening Bay
  - Rothesay Bay
  - St. George's Basin
  - Marigui Promontory
- Port Nelson
- York Sound
- Cape Torrens
- Prince Frederick Harbour
- Cape Pond
- Scott Strait
- Montague Sound
- Mudge Bay
- Swift Bay
- Cape Voltaire
- Bigge Point
- Admiralty Gulf—
  - Walmesley Bay
  - Chrystal Head
  - Port Warrender
  - Steep Head
- Parry Harbour
- Cape Bougainville
- Vansittart Bay
- Napier Broome Bay—
  - Guy Point
  - Bluff Point
  - Deep Bight
- Cape Talbot
- Cape Londonderry
- Cape Rulhieres
- Cape Bernier
- Cape St. Lambert
- Buckle Head

- Thurburn Bluff
- Cape Dussejour
- Cambridge Gulf
- WYNDHAM
- Cape Domet
- Shakespeare Head

ISLANDS.

- Eastern Group
- Middle Island
- Mondrain Island
- West Group
- Bald Island
- Breaksea Island
- Garden Island
- Rottnest Island
- Houtman Abrolhos, separated from mainland by Geelvink Channel
- Dirk Hartog Island—
  - Cape Inscription
  - Cape Levillain
  - Turtle Bay
  - Herald Bay
  - Notch Point
- Faure Island
- Dorre Island—
  - Cape Boullanger
  - Cape St. Cricq
- Bernier Island—
  - Cape Bonsard
- Montebello Islands—
  - Barrow Island
  - Cape Dupuy
  - Cape Poivre
  - Flacourt Bay
- Dampier Archipelago
- Buccaneer Archipelago
- Innumerable Islands off North Coast, many of which are unnamed; the most important are—
  - Augustus I.
  - Coronation I.
  - Lamarck I.
  - Bigge I.
  - Wollaston I.
  - Eclipse I.
  - Graham Moore I.
  - Lesueur I.
  - Bevely I.
  - Lacrosse I.

NORTHERN TERRITORY.

- Turtle Point
- Queen's Channel
- Key's Inlet
- Swamp Point
- Treachery Bay
- Pearce Point
- Cape Hay
- Port Keats
- Tree Point
- Hyland Bay
- Cape Dombey
- Cape Scott
- Cape Ford
- Anson Bay—
  - Cliff Head
  - Channel Point
- Point Blaze
- Fog Bay
- Port Patterson
- Bynoc Harbour—
  - Raft Point
- Point Charles
- Port Darwin—
  - West Point
  - Talc Head
  - West Arm
  - Middle Arm
  - East Arm
  - Fort Point
  - Point Emery
  - PALMERSTON
  - East Point
- Lee Point
- Shoal Bay—
  - Tree Point
- Fright Point
- Clarence Strait—
  - Adam Bay
    - Point Glyde
    - Point Stevens
    - Beatrice Bay
  - Escape Cliff
  - ESCAPE CLIFF (Old S'tlment.)
  - Cape Hotham
- Van Diemen Gulf—
  - Chambers Bay
  - Point Stuart
  - Finke Bay
  - Cunningham Channel
  - Midnight Point
  - Point Farewell
  - Red Cliff
  - Aiton Bay
  - Cape Don
- Popham Bay
- Trepang Bay
- Vashon Head
- Port Essington—
  - Coral Bay
  - Knocker Bay
  - Barrow Bay
  - VICTORIA (Old Settlement)
  - Record Point
  - Berkeley Bay
- Smith Point
- Port Bremer
- Danger Point
- Raffles Bay
- FORT WELLINGTON (Old Settlement)
- High Point
- Bowen Strait
- Mountnorris Bay—
  - Coombe Point
  - Annesley Point
  - Malay Bay
- Cape Cockburn
- De Courcy Head
- Brogden Point
- White Point
- Macquarie Strait
- Ross Point
- Barclay Point
- Turner Point
- Guion Point
- Cuthbert Point
- Hall Point
- Braithwaite Point
- Junction Bay
- Rolling Bay
- Hawkesbury Point
- West Point
- North-east Point
- Skirmish Point
- Boucaut Bay
- False Point
- Cape Stewart
- Castlereagh Bay
- Glyde's Inlet
- Cadell's Strait
- Point Napier
- Buckingham Bay
- Arnhem Bay
- Cape Newbold
- Malay Road
- Cape Wilberforce
- Melville Bay
- Dundas Point
- Cape Arnhem
- Gulf of Carpentaria—
  - Point Alexander
  - Point Middle
  - Caledon Bay
  - Cape Grey
  - Point Arrowsmith
  - Cape Shield
  - Point Blane
  - Blue Mud Bay—
    - Bennet Bay
  - Cape Barrow
  - Lowrie's Channel
  - Limmen Bight—
    - Port Roper
  - Port McArthur

ISLANDS.

- Quoin Island
- Clump I.
- Peron Islands
- Bathurst Island—
  - Cape Fourcroy
  - Cape Helvetius
  - Gordon Bay
  - Point Hurd
  - Rocky Point
  - Point Caution
  - Point Deception
  - Point Brace
  - Cockburn Sound
  - Apsley Strait
- Melville Island—
  - Shoal Bay
  - Cockle Point
  - Cape Gambier
  - Cape Keith
  - Cape Fleeming
  - Point Jahleel
  - Point Byng
  - Brenton Bay
  - Smoky Point
  - Point Jual
  - Lethbridge Bay
  - Point Radford
  - Snake Bay
  - Shark Bay
  - Cape Van Diemen
  - Piper's Head
  - St. Asaph Bay
  - Luxmoore Head
  - Point Barlow
  - DUNDAS (old Settlement)
  - Gordon Point
  - Medina Inlet
- Vernon Islands
- Barron I.
- Field I.
- Sir George Hope's Islands
- Croker Island—
  - Cape Croker
- North Goulburn Island—
  - Cone Point
  - Sand Point
- South Goulburn Island
- Crocodile Islands
- Banyan Island
- Howard Island—
  - Point Guy
  - Point Bristow
- Elcho Island
- Wessel's Islands—
  - Point Dale
  - Brown's Strait
  - Cumberland's Strait
  - Cape Wessel
- The English Coy's Islands—
  - Mallison's Island
  - Inglis Island
  - Bosanquet Island, and others
- Melville Island
- Woodah Island
- Bickerton Island
- Winchelsea Island
- Groote Eylandt—
  - North-west Bay
  - Cape Beatrice
- Sir Edward Pellew's Group—
  - West Island
  - South-west Island
  - Centre Island
  - North Island—
    - Cape Pellew
  - Vanderlin's Island—
    - Cape Vanderlin

TASMANIA.

- Banks Strait
- Cape Portland
- Cape Naturaliste
- Eddystone Point
- Bay of Fires
- Skeleton Bay
- Grant's Point

- George's Bay—
  - Moulting Bay
    - ST. HELENS
- St. Helen's Point
- Diana's Basin
- Henderson's Lagoon
- St. Patrick's Head
- Saltwater Inlet
- Picanini Point
- Long Point
- Maclean's Bay
- Peggy's Point
- Cape Lodi
- Half-moon Bay
- Isaac's Point
- Bluestone Bay
- Cape Tourville
- Sleepy Bay
- Thouin (Wineglass) Bay
- Cape Forestier
- Schouten Passage
- Cole's Bay
- Hepburn's Point
- Pelican Bay
- Moulting Lagoon
- King Bay
- Point Bagot
- Waterloo Point
- Webber's Point
- Buxton's Point
- Little Swan Port
- Cape Bailly
- Grindstone Bay
- Cape Bougainville
- Oakhampton Bay
- Spring Bay
- Prosser's Bay
- Carrickfergus Bay
- Cockle Bay
- Pebbly Point
- Cape Bernier
- Point du Ressac
- Marion Bay—
  - Blackman's Bay
- Cape Paul Lamanon
- North Bay
- Cape Frederick Hendrick
- Wilmot Harbour
- Humper's Bluff
- Yellow Bluff
- Cape Surville
- Clyde Point
- Monge (Pirates') Bay
- Fortescue Bay
- Cape Hauy
- Cape Pillar
- East Head
- Port Arthur
  - Opossum Bay
- West Head
- Cape Raoul
- Tunnel Bay
- Three Beach Bay
- Two Island Bay
- South West Point
- Wedge Bay
- Roaring Beach
- North West Head
- Slopen Main
- Lime Bay
- Ironstone Point
- Norfolk Bay—
  - Plunkett Point
  - Saltwater River
  - Price's Bay
  - Impression Bay
  - Eagle Hawk Bay
  - Flinders Bay
  - King George's Sound
  - Breakneck Bay
  - Primrose Point
- Frederick Henry Bay—
  - Carlton Bluff
  - Pittwater
  - SORELL
  - Pipeclay Lagoon
  - Cape Deslace
  - Cape Contrariety
- Storm Bay—
  - Cape Direction
  - Half-moon Bay
  - Opossum Bay
  - Gellibrand's Point
  - Ralph's Bay
  - Mortimer Bay
  - Dixon's Point
  - Droughty Point
  - River Derwent—
    - Kangaroo Point
    - BELLERIVE
    - RISDON
    - GLENORCHY
    - HOBART
    - Sandy Bay
  - Crayfish Point
  - Blackman's Bay
  - Pearson's Point
  - Passage Point
- North-west Bay—
  - Tinderbox Bay
  - The Chimneys
- D'Entrecasteaux Channel—
  - Oyster Cove
  - Little Oyster Cove
  - Trial Bay
  - Perch Bay
  - Little Peppermint Bay
  - Peppermint Bay
  - Birch's Bay
  - Fleury's Point
  - Three Hut Point
  - Reef Point
  - River Huon—
    - Garden Island Point
    - Charlotte's Cove
    - Port Cygnet
    - PORT CYGNET
    - Point Beaupres
    - FRANKLIN
  - Huon Point
  - Roaring Bay
  - Point Esperance
  - Port Esperance
  - Point Scott
  - Little Garrett's Bight
  - Lady's Bay
  - Sister's Bay
  - Point Burnett
  - South Port
  - South Port Lagoon
  - Eliza Point
  - Recherche Bay
    - Rocky Bay
  - Point Arthur
  - Whale Head
  - Three Hillock Point
- South East Cape
- South Cape Bay
- South Cape
- Louisa Bay
- Cox Bight
- New Harbour
- Ketchen Bay
- South-west Cape
- Hilliard Head
- Port Davey—
  - Turnbull Head
  - Horseshoe Bay
  - Big Bay
  - Bathurst Harbour
  - Starvation Bay
  - Long Bay
  - Bramble Cove
  - Ashley Point
  - Bluff Point (Berry Head)
  - Pym Point
  - Woody Point
  - Fitzroy Point
  - Observatory Point
  - Curtis Point
  - Bond Bay
  - Kelly Basin
  - Earle Point
  - Whaler's Cove
  - Garden Point
  - Pollard Point
- Point St. Vincent
- Elliot Cove
- Rocky Point
- Mainwaring Inlet
- Mainwaring Cove
- Point Hibbs
- Cape Sorell
- Macquarie Harbour—
  - Pilot Bay
  - Direction (Wellington) Head
  - Mosquito Bay
  - Middle Head (Point Back-again)
  - Table Head
  - Liberty Point
  - Twain (Double) Cove
  - Ram Point
  - Birch Inlet
  - Kelly's Basin
  - Pine Point
  - Farm Cove
  - Coal Head
  - Sophia Point
  - Pine Cove
  - Long Bay
  - STRAHAN
  - Smith's Cove
  - Swan Basin
  - River Point
  - Kelly's Channel
  - Sandy Point
- Trial Harbour
- Granville Harbour
- Sandy Cape
- Native Well Bay
- Ordnance Point
- Whale's Head
- Sundown Point
- Bluff Point
- West Point
- Nettley Bay
- Pavement Point
- Green Point
- Canal Bay
- Calm Bay
- Studland Bay
- Bluff Point
- Valley Bay
- Cape Grim
- Robbin's Passage
- Duck Bay
- West Bay—
  - West Inlet
- West Point
- North Point
- Half-moon Bay
- Circular Head
- STANLEY
- East Inlet
- Brickmaker's Bay
- Pebbly Bay
- Rocky Cape
- Cavern Cliff
- Jacob's Boat Harbour
- Table Cape
- Freestone Cove
- Woody Hill Point
- Port Maldon
- Parish's Boat Harbour
- Red Rock
- Blackman's Point
- Emu Bay
- BURNIE
- Preservation Bay
- Teatree Point
- ULVERSTONE
- Port Fenton
- Mersey Bluff
- Port Frederick
- DEVONPORT
- Point Sorell
- Port Sorrell
- Little Badger Head
- Badger Head
- West Head (Point Flinders)
- Port Dalrymple—
  - Kelso Bay
  - West Arm
  - Inspection Head
  - Middle Arm
  - Middle Head
  - Flat Point
  - Point Rapid
  - Shark Bay
  - Swan Point
  - Cimitiere Point
  - Freshwater Point

  - Green Point
  - Battery Point
  - LAUNCESTON
  - Nelson's Point
  - Swan Bay
  - One Tree Point
  - Long Point
  - East Arm
  - Lagoon Bay
  - Pilot Bay
- Low Head
- Five Mile Bluff
- Stony Head
- Black Rock
- Tam o' Shanter Bay
- Noland Bay
- West Double Sandy Point
- East Double Sandy Point
- Anderson's Bay
- Croppie's Point
- Croppie's Bay
- Waterhouse Point
- Ringarooma Bay

ISLANDS.

- Swan Island
- St. Helen's Island
- Schouten Island—
  - Trumpeter Bay
- Maria Island—
  - Cape Boulanger
  - Waterfall Bay
  - Ragged Head
  - Cape Mistaken
  - Cape Des Tombeaux
  - Riddle Bay
  - Cape Bald
  - Cape Maurouard
  - Crayfish Point
  - Cape Peron
  - Point Mauge
  - Oyster Bay
  - Long Point
  - Bloodstone Point
  - Gull's Nest Point
  - Return Point
  - Settlement Harbour
- Tasman's Island
- Slopen Island
- Franklin Island
- Bruni Island—
  - Kelly's Point
  - Cape Delasorte
  - Bull Bay
  - Kelly Bay
  - One Tree Point
  - Yellow Bluff
  - Trumpeter Bay
  - Variety Bay
  - Cape Frederick Henry
  - Adventure Bay
  - Cape Conacle
  - Fluted Cape
  - Cape Connella
  - Tasman's Head
  - East Head
  - Cloudy Bay—
    - Cloudy Bay Lagoon
  - Point Grand
  - West Head
  - Bruni Head
  - Cape Bruni
  - Standaway Bay
  - Great Taylor's Bay
  - Point Ventenat
  - Little Taylor's Bay—
    - Daniel's Bay
  - Simpson's Point
  - Isthmus Bay
  - Great Bay
  - Stockyard Point
  - Missionary Bay
  - Soldier's Point
  - Kinghorn Point
  - Apollo Bay
  - Roberts' Point
  - Barnes' Bay—
    - Shelley Cove
    - Simmonds' Bay
  - Woodcutter's Point
  - Blythe's Point
- Maatsuyker (De Witt) Islands
- Break Sea Island, and others in Port Davey
- Phillip Island
- Sarah (Settlement) Island, and others in Macquarie H'bor.
- Off Cape Grim—
  - Trefoil Island
  - Hunter's Islands—
    - Barren Island
    - Three Hummocks' Island
      - Hummocky Head
      - Mermaid Rock
    - Albatross Island
    - King's Island—
      - Cape Wickham
      - Seal Bay
      - Stokes' Point
      - Fitzmaurice Bay
      - Currie Harbour
      - George King's Passage
- Robbin's Island—
  - Robbin's Point
- Walker's Island
- Perkin's Island
- Waterhouse Island
- Kent Group—
  - Erith Island—
    - Murray's Passage
  - Deal Island—
    - Garden Cove
    - Garden Point
    - Pegwell Bluff
    - Winter Cove
    - Squally Cove
    - Romney Bluff
- The Sisters
- Flinders Island—
  - Logan's Lagoon
  - Point Real
  - Adelaide's Bay
  - Badger's Corner
  - Trousers' Point
  - Fothringate Bay
  - Parry's Bay
  - Long Point
  - Arthur's Bay
  - Lillie's Bay
  - Marshall Bay
  - Cape Frankland
  - Killiecrankie Bay
- Great Dog Island
- Vansittart Island
- Pelican Island
- Tinkettle Island
- Woody Island
- Badger Island
- Long Island
- Mount Chappell Island
- Goose Island
- Barren Island—
  - Puncheon Point
  - Harley Point
  - Cape Barren
  - Cone Point
  - Kent Bay
  - Sloping Point
  - Wombat Point
  - Half-moon Bay
  - Thunder and Lightning Bay
  - Munro Bay
  - Deep Bay
  - Apple Orchard Point
  - Dover Point
- Passage Island
- Forsyth Island
- Preservation Island
- Ram Island, in Armstrong's Channel
- Clarke Island—
  - Moriarty Bay
  - Moriarty Point
  - Lookout Head
  - Snug Cove

(iii.) *Historical Significance of Coastal Names.* It is interesting to trace the voyages of some of the early navigators by the names bestowed by them on various coastal features—thus Dutch names are found on various points of the Western Australian coast, in Nuyt's Archipelago, in the Northern Territory, and in the Gulf of Carpentaria; Captain Cook can be followed along the coasts of New South Wales and Queensland; Flinders' track is easily recognisable from Sydney southwards, as far west as Cape Catastrophe by the numerous Lincolnshire names bestowed by him; and the French navigators of the end of the Eighteenth and the beginning of the Nineteenth Century, have left their names all along the Western Australian, South Australian, and Tasmanian coasts.

5. **Orography.**—Owing to the absence of any very high mountain chains, and to the great depression in the centre of Australia, the average elevation of the Australian continent over the level of the surrounding oceans is less than that of any of the other continents. This average, however, has not yet been estimated with any degree of precision.

(i). *General Description of the Surface.* A section through the continent from east to west, at the point of its greatest breadth, shews first a narrow belt of coastal plain. This plain, extending north and south along the whole eastern coast, is well watered by rivers. Of variable width, seldom more than sixty or seventy miles, and occasionally only a few miles, its average may, nevertheless, be taken as about forty to fifty. From this, the Great Dividing Range, extending from the north of Queensland to the south of New South Wales, and thence sweeping westward through Victoria, rises often abruptly, and frequently presents bold escarpments on its eastern face. The descent on its western slopes is gradual, until in the country to the north of Spencer's Gulf—the plain is not above the sea-level, and occasionally is even below it. Then there is another almost imperceptible rise until the mountain ranges of Western Australia are reached, and beyond these another strip of coastal plain.

The great central plain is the most distinctive feature of the Australian continent, and its climatic peculiarities are doubtless to be largely ascribed thereto.

(ii.) *Mountain Systems.* The main mountain feature of Australia is the Great Dividing Range, which runs along the whole eastern coast of the continent, and can be traced over the islands of Torres Straits to New Guinea, while in the south one branch sweeps westwards towards the boundary of Victoria and South Australia, and the other—the main branch—finds its termination in Tasmania.

This mountain system is, at no place, more than 250 miles from the eastern coast-line, and it approaches to within 27 miles. On the whole it is much closer to the coast in both New South Wales and Victoria than it is in Queensland, the corresponding average distances being about 70, 65, and 130 miles respectively.

The mountains of Australia are of relatively small altitude. Thus in Queensland the Great Dividing Range reaches a height above sea-level of only 5440 feet (Mount Bartle Frere). In New South Wales Mount Kosciusko is only about 7300 feet, and Mount Bogong in Victoria only about 6510 feet high. This fact, viz., that there are no high mountains in Australia, is also an important element in considering the climate of Australia.

There is no connection between the mountains of the eastern and other States of Australia. In South Australia there are two peaks rising to about 3000 feet (Mount Remarkable and Mount Brown); and in Western Australia the height of 3800 feet (Mount Bruce) is attained. In Tasmania the greatest height is only 5070 feet (Cradle Mountain).

It may be of interest to observe that at one time Tasmania was doubtless connected with the mainland. As the Great Dividing Range can in the north be traced from Cape York across Torres Straits to New Guinea, so can its main axis be similarly followed across the shallow waters of Bass Straits and its islands from Wilson's Promontory to Tasmania, which may be said to be completely occupied by ramifications of the chain. The central part of the island is occupied by an elevated plateau, somewhat triangular in shape, and presenting bold fronts to the east, west, and north. This does not extend in any direction more than about sixty miles. The plateau rests upon a more extensive tableland, the contour of which closely follows the coast-line, and occasionally broadens out into low-lying tracts not much above sea-level. The extreme south of the island is rugged in character.

The positions of the mountain ranges are shewn on the map, specially illustrating Australian orography and hydrography.

6. **Hydrology of Australia.**—On the whole Australia is a country with a limited rainfall. This is immediately evident on studying its river systems, its lakes, and its artesian areas. Its one large river system is that of the Murray and Darling Rivers, of which the former stream is the larger and more important. Many of the rivers of the interior run only after heavy rains. Depending almost entirely on rainfall, a consequence of the absence of high mountains, they drain large areas with very varying relation as between rainfall and flow. Thus it has been estimated that not more than ten per cent. of the rainfall on the "catchment-area" of the Darling River above Bourke (N.S.W.), discharged itself past that town. The rate of fall is often very slight.

(i.) *Rivers.* The Rivers of Australia may be divided into two great classes, those o the coastal plains, with moderate rates of fall, and those of the central plains, with very slight fall. Of the former not many are navigable for any distance from their mouths, and bars make many of them difficult of access or inaccessible from the sea.

The two largest rivers of the eastern coast are the Burdekin, discharging into Upstart Bay, with a catchment area of 53,500 square miles, and the Fitzroy, which reaches the sea at Keppel Bay, and drains about 55,600 square miles. The Hunter is the largest coastal river of New South Wales, draining about 11,000 square miles, before it empties itself at Newcastle. The Murray River, with its great tributary, the Darling, drains a considerable part of Queensland, the major part of New South Wales, and a large part of Victoria. It debouches into the arm of the sea known as Lake Alexandrina, on the eastern side of the South Australian coast. The total length of the Murray is about 1720 miles, 510 being in South Australia, and 1250 constituting the boundary between New South Wales and Victoria. In good seasons the river is navigable for 1,590 miles from its mouth.

The Darling-Murray is navigable in good seasons for 2345 miles from its mouth, its total length being 3282 miles.

The rivers on the north-west coast of Australia (Western Australia) are of considerable size, *e.g.*, the Murchison, Gascoyne, Ashburton, Fortescue, De Grey, Fitzroy, Drysdale, and Ord. So also are those in the Northern Territory, *e.g.*, Victoria and Daly. The former of these, estimated to drain 90,000 square miles, is said to be navigable for the largest vessels for 50 miles.

The rivers on the Queensland side of the Gulf of Carpentaria are also of considerable size, *e.g.*, Gregory, Leichhardt, Cloncurry, Gilbert, Mitchell, etc.

Owing to the small fall of many of the interior rivers, in wet seasons they may flood hundreds of miles of country, while in dry seasons they form a mere succession of waterholes, or are entirely dry. It is this fact that explains the apparently conflicting reports of the early explorers, one regarding the interior as an inland sea, and another as a desert.

The rivers of Tasmania have short and rapid courses, as the configuration of the territory would indicate.

(ii.) *Lakes.* The "lakes" of Australia may be divided into three classes, viz.: (*a*) true permanent lakes; (*b*) lakes which being very shallow, become mere morasses in dry seasons, or even dry up and finally present a cracked surface of salt and dry mud, and (*c*) lakes which are really inlets of the ocean, opening out into a lake-like expanse.

The second class (*b*) is the only one which seems to demand special mention. These are a characteristic of the great central plain of Australia. Some of them (*e.g.*, Lake Torrens, Gairdner, Eyre, Frome) are of considerable extent.

(iii.) *Artesian Areas.* A considerable tract of the plain country of New South Wales and of Queensland carries a water-bearing stratum usually at a great depth. A large number of artesian bores have been put down, from which there is now a considerable efflux. These are of great value, and render large areas available which otherwise would be difficult to occupy even for pastoral purposes.

The distribution of the rivers and lakes, and the approximate boundaries of the artesian basin, are shewn on the accompanying map.

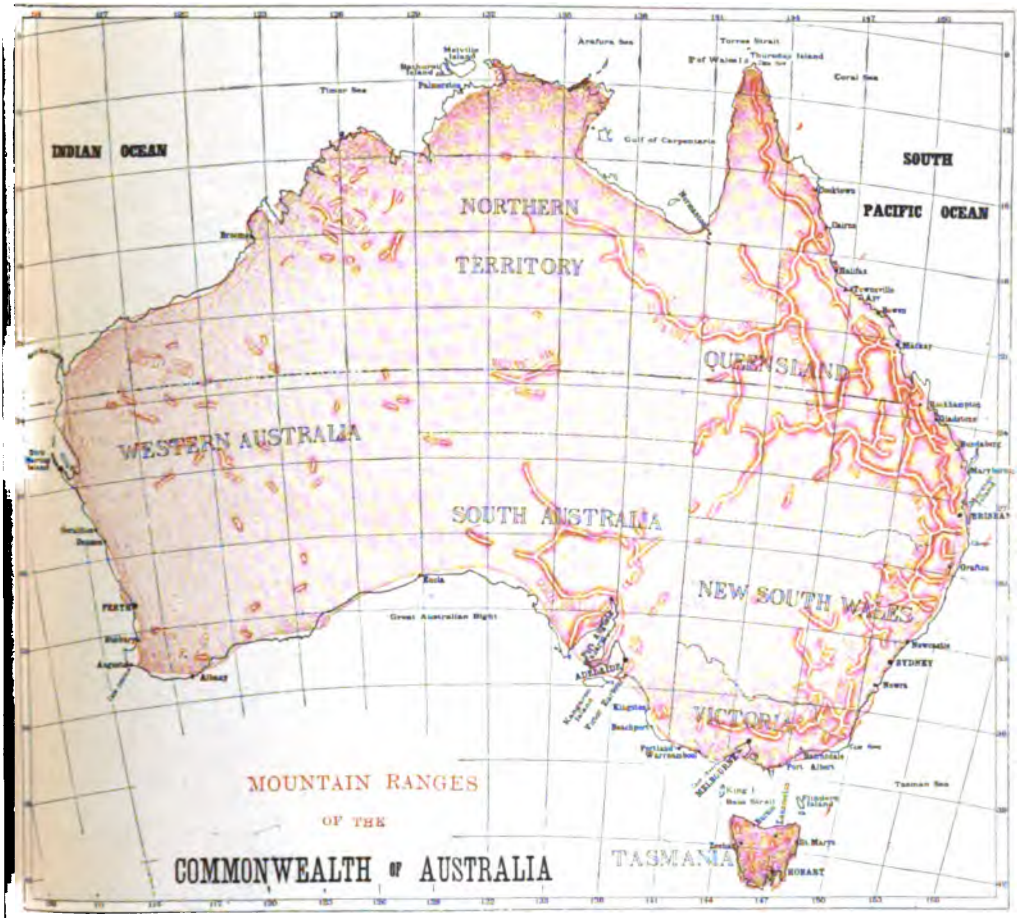
The statistics relating to artesian bores will be given *in extenso* hereinafter, viz., in the section dealing with Water Conservation.

§ 5. The Geology of Australia.

1. **General.**—The geology of different parts of Australia has, naturally, been studied with varying degrees of thoroughness. The great area to be covered, the difficulties to be encountered, and the limited time so far available, are obvious. Instead of attempting, therefore, to present in bold outline a general picture of Australian Geology, it is proposed to give authoritative, independent sketches of the geology of each State, notwithstanding that this will necessarily involve some degree of repetition.

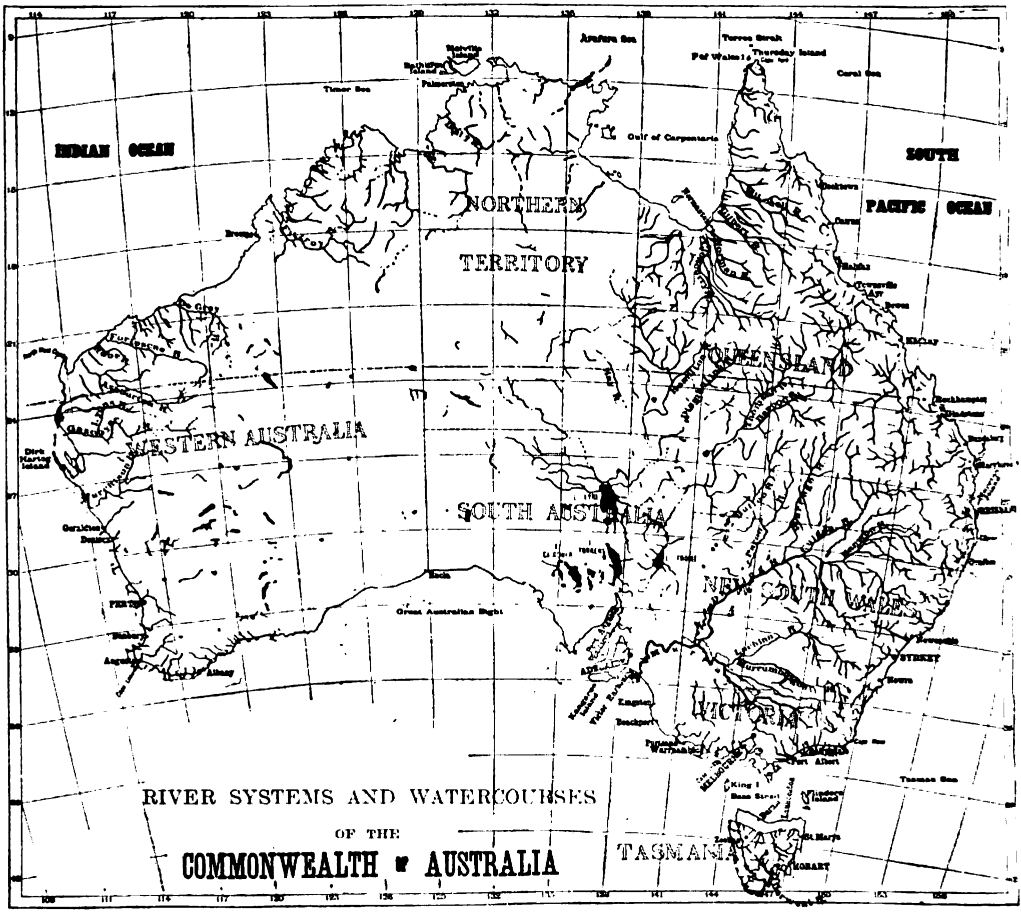
A knowledge of the main features of Australian physical geography will be assumed, and references thereto consequently reduced to a minimum.

POSITION OF THE MOUNTAIN RANGES OF THE COMMONWEALTH OF AUSTRALIA.



This map is intended to shew merely the geographical position of the mountain ranges of the Commonwealth. Owing to the smallness of the scale it has not been possible to give to the minor mountain ranges a distinctive marking shewing their relative importance. The map thus indicates the position rather than the size of the features represented.

RIVER SYSTEMS, WATERCOURSES, AND LAKES OF THE COMMONWEALTH OF AUSTRALIA.



This map is intended merely to shew the geographical position of the rivers, watercourses, and lakes of the Commonwealth. Owing to the smallness of the scale it has not been possible to represent the smaller rivers, tributaries, etc., in a size proportionate to that of the larger rivers. The position rather than the size of the features is represented. It should be added that the coastal rivers are, without exception, flowing rivers. Some of the internal rivers are merely watercourses, quite dry in dry seasons, though sometimes carrying large volumes of water in wet seasons. The "lakes" also are often dry.

2. Geology of New South Wales.[1]—In physical configuration New South Wales may be divided into three regions, viz.:—(1) The narrow coastal plain on the east; (2) the Great Dividing Range and its associated table-lands; and (3) the western plains. These will first be individually referred to.

(i.) *The Main Dividing Range.* The main dividing range or table-land of New South Wales is composed for the most part of Palæozoic sediments, together with granitic and other igneous rocks; that portion of it, however, which is situated to the westward of Maitland, Sydney, and Wollongong, is capped with Mesozoic strata, viz., the Hawkesbury series, forming the covering of the principal coal basin.

(ii.) *The Coastal Plains.* The coastal plains, which extend from the eastern foothills of the Dividing Range to the ocean, and which vary in width from a mile or two up to 150 miles, contain two coal-bearing basins, the chief of which extends from the neighbourhood of Maitland on the north to the Shoalhaven River on the south. This coal basin consists of the Permo-Carboniferous coal measures overlaid by the Hawkesbury (Triassic) Series. The second coal-field referred to is that known as the Clarence and Richmond field. It is composed of Triassic rocks, and so far as at present known it contains no coal seams of commercial value. It may, however, be underlaid by the productive Permo-Carboniferous measures.

The coastal plains are also largely composed of Post-Tertiary fluviatile deposits, which form exceedingly rich agricultural areas. A considerable area between the Richmond and the Tweed Rivers is occupied by basalt, the decomposition of which has produced a rich soil eminently suitable for agriculture and dairy farming.

(iii.) *The Great Western Plains.* The great western plains, which extend from the western foothills of the great tableland, are underlain by granite rocks and sediments of Palæozoic, Mesozoic, and early Tertiary age. The most northerly portion is Mesozoic (Triassic), and forms the artesian water-basin. South of this is a Palæozoic belt stretching westerly from the great tableland to the South Australian border. During the Mesozoic era this belt formed a mountain range, whose direction was at right angles to the main divide; but this range was subsequently planed down by denudation, and its surface is now level with the surrounding country. To the south of this, along the Lower Darling and the Murray, is a large area of early Tertiary marine beds (Eocene), while the remainder of the Riverina district (up the Murray, Murrumbidgee, and Lachlan Rivers) is underlain for the most part by granitic, Silurian, and Devonian rocks.

The surface of the western plains is covered by Post-Tertiary deposits, flood loams, etc., except in isolated places where the remains of the older formations still rise above their surface.

(iv.) *Classification of the Sedimentary Rocks of New South Wales.* In the following classification some indication of the economic significance of the different members of each series is given:—

CAINOZOIC.	Post-Tertiary.	Recent; auriferous and stanniferous soils and alluvial deposits in the beds of existing rivers.
		Pleistocene; alluvial leads containing gold, tin and gem-stones.
	Tertiary.	Pliocene; alluvial leads, frequently covered by basalt, and containing gold, tin and gem-stones.
		Miocene; quartzites with plant remains at Dalton, near Gunning.
		Eocene; marine limestones and calcareous sandstones of the Lower Darling; plant beds of the New England district.

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[1] This article is contributed by E. F. Pittman, Esquire, A.R.S.M., Under Secretary for Mines and Agriculture, New South Wales, Government Geologist of New South Wales, sometime Lecturer, etc., on Mining, University of Sydney.

MESOZOIC.	Cretaceous.	Upper Cretaceous (desert sandstone); contains deposits of precious opal. Middle Cretaceous; auriferous alluvial leads at Mount Brown. Lower Cretaceous (Rolling Downs formation of Queensland).	
	Jurassic.	Talbragar fish-bearing shales.	
	Triassic.	The Ipswich coal measures and the Clarence coal measures.	Form the base of the artesian water-bearing basin. These measures contain thin coal seams, not at present worked in New South Wales.
		Hawkesbury series.	Wiannamatta shales (contain fire-clays). Hawksbury sandstones (building stone). Narrabeen shales.
PALÆOZOIC.	Permo-Carboniferous.	1. Upper or Newcastle coal measures. 2. Dempsey series. 3. Middle or Tomago coal measures. 4. Upper marine series. 5. Greta coal measures. 6. Lower marine series.	The productive coal seams of New South Wales occur in these measures.
	Carboniferous.	Rhacopteris beds and associated marine beds. Gympie claystones (of Queensland).	All the metalliferous lodes and reefs occur in these formations, or in such igneous rocks as granites, quartz - porphyries, felsites, diorites, etc.
	Devonian.	Upper Devonian. Lower Devonian.	
	Silurian.	Limestones and slates at Yass, Molong, Wellington, Quidong, etc.	
	Ordovician.	Slates and tuffs at Mandurama, Cadia, Tomingley, Berridale, and in the counties of Auckland and Wellesley, on the Victorian border.	
	Cambrian.	Limestones, schists and glacial beds of Terrawingee.	

(v.) *Cambrian System*. The oldest sedimentary rocks of New South Wales are probably those forming the Barrier Ranges in the far west. No organic remains have yet been found in them, and their geological age has been a matter of speculation for many years. Quite recently Mr. Mawson, of Adelaide, has stated that he has traced the Lower Cambrian beds of South Australia to Terrawingee, north of Broken Hill, and he also considers that the metamorphic rocks of Broken Hill may be of pre-Cambrian age. These statements have not yet been confirmed by the New South Wales Geological Survey, though it is quite possible they are correct.

The rocks at Broken Hill consist of a laminated series of crystalline gneisses, quartzites, micaceous and hornblendic schists, and garnet sandstones. Broken Hill itself is a low range in which these rocks have been folded into an anticline. The great Broken Hill lode occupies the saddle-shaped cavity caused by the folding of the strata as stated, but the saddle lode is now of larger dimensions than the original cavity, owing to the gradual replacement (metasomatism) of the country rock forming the walls by ores of lead, silver, and zinc.

To the north of Broken Hill the metamorphic rocks just described give place—in an unbroken series—to less altered slates and schists, traversed by tin-bearing dykes of coarse pegmatite, as at Euriowie, while at Terrawingee there are massive beds of blue limestone (and, according to Mr. Mawson, glacial till), which apparently belong to the same series.

(vi.) *Ordovician System.* At the Lyndhurst goldfields, near Mandurama, occurs a series of banded sedimentary rocks, consisting of indurated bluish grey claystones alternating with highly altered volcanic tuffs. The claystones contain Trilobites (agnostidæ), Brachiopods (obolella), Pteropods (hyolithes), Graptolites (diplograptus, dicellograptus, climacograptus, etc.), and remains of Radiolaria. The tuff beds, which vary from the thickness of paper up to 20 feet, contain bunches and impregnations of auriferous sulphides, and are worked for gold.

The series of banded rocks has been intruded by sills and dykes of hornblende, andesite, etc., which are apparently offshoots from a large body of hornblendic granite. The intrusions appear to have occurred while the sediments were still in a plastic condition, for the tuffs have been so forced into the claystones as to give the former the appearance of being intrusive.

Dark blue claystones and slates containing similar Graptolites also occur at Tomingley, Cadia, Berridale, and on the Victorian border—counties of Auckland and Wellesley. At Tomingley the slates are intersected by auriferous quartz reefs.

(vii.) *Silurian System.* Silurian rocks cover a large area of New South Wales, but the locality where they can be most satisfactorily studied is between Yass and the Murrumbidgee River. There they consist of a considerable thickness of slates, sandstones, and limestones, with numerous characteristic fossils, such as Trilobites, Corals, Echinoderms, Brachiopoda, and Mollusca.

The celebrated auriferous reefs at Hill End, Tambaroora, and Hargraves occur in Silurian rocks, consisting of slates with interbedded volcanic tuffs, the latter being fossiliferous at Hill End. The Silurian rocks have been intruded, altered, and disturbed by granites, felspar, porphyries, etc.

(viii.) *The Devonian System.* The Silurian slates and limestones to the south of Yass are succeeded by a belt of lavas (rhyolites, etc.) and tuffs, which separate them from a newer series of blue limestones, quartzites, and slates containing fossils of Lower Devonian affinities. At Wellington also the junction can be seen between Silurian and Lower Devonian rocks. At Tamworth, rocks of the same age as the Carboniferous of Europe are underlain by a series of banded claystone and volcanic tuffs, with occasional beds of limestone and intrusive sills of granite. The claystones contain numerous Radiolarian remains, while in the tuffs is found the plant *Lepidodendron australe*, and the limestones contain an abundant fossil fauna, including corals, which enable these beds to be correlated with the Upper Devonian of Queensland. A good section of Upper Devonian quartzites and shales containing *Lepidodendron australe* and numerous marine fossils can also be seen at Mount Lambie, near Rydal.

The Devonian System is characterised by the prevalence of grey and red quartzites and grits, and very large areas of the southern half of the State are covered by these rocks.

(ix.) *The Carboniferous System.* A considerable area of the coastal plain and tableland north of Newcastle is occupied by bluish claystones and tuffs, with occasional belts of limestones, corresponding in age with the Lower Carboniferous rocks of Europe. Near Port Stephens they contain interbedded deposits of Magnetite, which, however, contains a considerable percentage of Titanium, whereby its value as an iron ore is reduced. At Copeland and several other goldfields the claystones are intersected by gold-bearing reefs. The plant *Lepidodendron australe* is fairly common in Lower Carboniferous rocks as well as in the Upper Devonian.

In the neighbourhood of Stroud is an area of shales, sandstones, and cherts containing abundant impressions of *Rhacopteris*, and these beds have been classified as Upper Carboniferous. No workable seams of coal have been found in the Carboniferous system, though in the *Rhacopteris* series near Stroud several very inferior seams with numerous bands are known.

(x.) *The Permo-Carboniferous System.* The productive coal measures of New South Wale scontain fossil remains, showing affinities to both the Permian and Carboniferous systems of Europe, hence the composite name which has been given to them. The measures are about 15,000 feet in thickness and have been classified as follows:—

(a) *Upper or Newcastle Coal Measures*, containing an aggregate of about 100 feet of coal.

(b) *Dempsey Series:* freshwater beds containing no productive coal. This series thins out completely in certain directions.

(c) *Middle, or Tomago, or East Maitland Coal Measures*, containing an aggregate of about 40 feet of coal.

(d) *Upper Marine Series:* sandstones and shales specially characterised by the predominance of the brachiopod *Productus brachythœrus*. At Branxton traces of glacial action have been seen in these beds.

(e) *Lower or Greta Coal Measures*, containing from 20 to 40 feet of coal.

(f) *Lower Marine Series:* sandstones and shales: specially characterised by the mollusc *Eurydesma cordata*. Glaciated boulders and erratics have been found in these beds at Lochinvar.

The three coal-bearing series contain numerous plant remains, including *Glossopteris*, *Gangamopteris*, *Phyllotheca*, *Nœggerathiopsis*, etc., while the Lower and Upper Marine series are characterised by an abundant fauna. The Permo-Carboniferous coal basin occupies an area of about 25,000 square miles extending to the north, west and south of Sydney, and is the storehouse of one of the State's most valuable assets. In several collieries near West Maitland very fine seams of coal of 20 feet and upwards are being worked. A narrow isolated deposit of the Permo-Carboniferous system extends from near Inverell to the Queensland border. It contains a fine seam of coal (27 feet thick in places), which probably belongs to the Greta series. These measures lie unconformably upon altered claystones of Lower Carboniferous age, and have been intruded by granite which has tilted the coal seam to an angle of about 40 degrees.

(xi.) *The Triassic System.* The Permo-Carboniferous coal basin is overlain in most places by a thickness of over 1000 feet of shales and thick-bedded sandstones. There is no apparent stratigraphical unconformity between these beds and the underlying coal measures, nevertheless there is a very decided break in the fossil life, and the fauna and flora of the newer beds have been correlated with the Triassic system of Europe. These shales and sandstones have been named the Hawkesbury series, and have been subdivided as follows in descending order:—

(a) *Wiannamatta Shales.* Blue, red, and grey shales, with occasional beds of sandstone. These shales are used for the manufacture of bricks and tiles, and some have the qualities of fireclay.

(b) *Hawkesbury Sandstones.* Thick-bedded greyish-white freestones, used commonly about Sydney for building purposes.

(c) *Narrabeen Shales.* Beds of chocolate-coloured shales and greenish tuffs varying from a foot or so to about 1800 feet in thickness. These shales form a very definite and persistent horizon.

The Clarence River coal basin is composed of rocks closely resembling the Hawkesbury series, and they are regarded as contemporaneous, thus the—

(d) Upper Clarence shales may be the equivalents of the Wiannamatta shales.
(e) Clarence sandstones ,, ,, Hawkesbury sandstones.
(f) Lower Clarence shales ,, ,, Narrabeen shales.

There are numerous seams of coal in the Clarence Measures, but they are too thin and their quality too inferior to be of commercial value. It is very probable, however, that these Triassic rocks may be underlain by the Permo-Carboniferous Coal Measures, which may mean a considerable addition to the coal resources of the State. The Clarence Coal Measures extend through Southern Queensland to the western flanks of the tableland of New South Wales, and dip thence under the North-Western plains, forming the great artesian basin.

(xii.) *Jurassic System.* About 20 miles north-east of Gulgong is a small lacustrine deposit of thin-bedded yellow shales containing plants and fish remains which are considered to be Jurassic. The deposit referred to lies unconformably upon massive beds of Hawkesbury sandstone; it is of small extent and is the only known representative of the Jurassic in the State. Amongst the fossil plants are *Tæniopteris daintreei*, *Podozamites lanceolatus*, *Alethopteris australis*, *Thinnfeldia falcata*, and *Baiera bidens*: the fish include *Leptolepis gregarius*, *Archæomene robustus*, *Coccolepis*, etc.

(xiii.) *Cretaceous System.* The Rolling Downs formation of Queensland, which has been classified as Lower Cretaceous, and which consists of a series of shales, limestones and sandstones, is not known to outcrop at the surface anywhere in New South Wales, but its characteristic fossils have been met with in wells at Yandama, in the Milparinka district, and a solid core from the Wallon bore, in the Moree district, shows that the drill penetrated about 1500 feet of Lower Cretaceous sediments there. It is possible, therefore, that these rocks underlie some considerable portion of the north-western plains.

The desert sandstones formation, which is believed to belong to the Upper Cretaceous epoch, is of very widespread occurrence over the north-western plains. There is a very marked stratigraphical unconformity between it and the Lower Cretaceous series, though there seems to be no practical distinction in regard to fossil life in the two formations. The most important fossils include—*Isocrinus*, *Maccoyella*, *Pseudavicula*, *Belemnites*, *Ancyloceras*, *Crioceras*, *Cimoliosaurus*. The desert sandstone is generally horizontally bedded, and occurs as isolated hills and low ranges. Two varieties of rock are particularly noticeable, one being a greyish-white freestone, while the other is a vitreous rock of the character of porcellanite. Occasional beds of conglomerate occur, containing pebbles of quartz, agate, and chalcedony, and there is also a soft, fine-grained, siliceous rock having somewhat the appearance of kaolin. At White Cliffs, in the Wilcannia district, and at Lightning Ridge, north of Walgett, precious opal occurs in this rock, and extensive mining operations are carried on there.

(xiv.) *Tertiary System.* (*a*) *Eocene.* In the south-western portion of the State, along the course of the Lower Darling and Murray Rivers, there is a large area of marine calcareous sandstones, which have been classified as Eocene. In the Arumpo bore these beds have been proved to be at least 900 feet thick, the fossil *Trigonia semiundulata* being found at that depth.

At Tooraweenah, Warrumbungle Mountains, a lacustrine deposit, consisting of two series of shales and sandstones, occurs, containing Eocene plant remains. The two series of beds are separated by a flow of trachytic lava, and a similar lava covers the upper beds.

In New England (at Elsmore, Emmaville, etc.) Eocene leaves are found in fluviatile deposits (tin-bearing gravels) covered by basalt.

(*b*) *Miocene.* At Dalton, near Gunning, there is a lacustrine deposit of quartzite which has been classified as Miocene, on account of the plant remains found therein.

(*c*) *Pliocene.* Deep auriferous leads at Gulgong and Forest Reefs have been found to contain Pliocene plant remains—seeds, etc. These deposits are mostly covered by basalt. Most of the Tertiary deposits are of lacustrine or fluviatile origin, and they are important chiefly on account of the alluvial gold and tin ore, as well as diamonds, contained in them.

(xv.) *Post-Tertiary.* Much of the alluvial gold, tin ore, and gems has been found in Post-Tertiary soils and gravels. These are for the most part shallow, and their contents have been easily recovered by the miners.

Pleistocene surface deposits cover great areas of the western plains, and are the means of obscuring the underlying geological formations and rendering prospecting operations difficult. At Mount Kosciusko there are evidences of much glaciation during Post-Tertiary times—striated boulders are very numerous, and glaciated pavements, *roches moutonnées*, and terminal and lateral moraines occur in a good state of preservation.

3. **Geology of Victoria.**[1]—The State of Victoria is of triangular shape, with its vertex to the east. Near the eastern end the Great Dividing Range enters, running south-westerly and westerly, being on the whole most rugged and of greatest altitude as it enters Victoria, *i.e.*, the general height falls as it runs westerly. On the whole also its southern faces are more steep than its northern, and as the Murray River is approached the characteristic is identical with that of the western plains of New South Wales.

(i.) *Geological Formations found in Victoria.* The following are the geological formations appearing in Victoria:—

SEDIMENTARY.

CAINOZOIC ...	Recent; Post-Pliocene; Pliocene—newer, older; Miocene; Eocene.
MESOZOIC ...	Jurassic.
PALÆOZOIC ...	Permo-Carboniferous; Carboniferous; Devonian; Silurian—Yeringian, Melburnian; Ordovician—Upper; Lower—Darriwill, Castlemaine, Bendigo, Lancefield; Cambrian—Heathcotian.

METAMORPHIC.

PALÆOZOIC ...	Schists.
ARCHÆAN ...	Schists and gneiss.

IGNEOUS.

VOLCANIC ...	Basic—Older, newer; Acidic—Dacite, etc.
PLUTONIC ...	Basic—Gabbro, etc.; Acidic—Granite, Syenite, Grano-diorite, etc.
DYKES ...	Basic; Acid.

The metamorphic and sedimentary series will be referred to in detail in the inverse order of the tabular statement.

(ii.) *Archæan System.* The Archæan system includes gneiss, schists, etc.

(*a*) *Gneiss.* In the vicinity of Barnawartha, Omeo, Bethanga, and Yackandandah there is an ancient system of rocks that are partly gneissic. White mica and garnets occur abundantly in them, and they are pierced by pegmatite, euritic, and other dykes. These rocks appear to be the most altered of the metamorphic series, and are more granitic in character than the schists of Yackandandah. At Cookimburra, Granya, and Bethanga, sulphides of lead, copper, iron, zinc, etc., together with gold and silver, have been found associated with the gneissic rocks, in lodes and disseminated. The soil is of poor quality in places, but of rich character about Bethanga.

(*b*) *Schists.* In many parts of Victoria schists have resulted from the alteration of the Silurian and Ordovician rocks caused by granite intrusions. Such schists may be seen at Maldon, south of Bendigo, Buxton, Beechworth, Omeo, Cassilis, etc. To the north of Yackandandah, however, there is a large area of schist which appears to be pre-Ordovician. The schist is much contorted and crumpled, and is characterised by a black mica. It differs widely from the adjacent Ordovician rocks exposed at Hillsborough, etc.

Schists occur over a great portion of the east of the State, and also are found in the south-west, but, so far, the Archæan schists have not been separated from the less ancient series by mapping, although very distinct on the ground.

Economically the schists are important on account of the mineral lodes associated with them. Gold, silver, copper, zinc, lead, arsenic, etc., are found at Cassilis, for instance. The Yackandandah schists have not hitherto proved rich in valuable minerals, but the contact schists often carry auriferous lodes, as at Maldon, Stawell, etc. Limestones have not been observed in this series.

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[1] This article was contributed by E. J. Dunn, Esquire, F.G.S., Director of the Geological Survey of Victoria.

(iii.) *Palæozoic.* The Palæozoic rocks include the following, viz.:—Cambrian, Ordovician, Silurian, Devonian, Carboniferous, and Permo-Carboniferous.

(*a*) *Cambrian (?) Heathcotian.* The Heathcotian rocks were first observed and separated from the Ordovician and Silurian beds in the neighbourhood of Heathcote, hence the name applied to them by Professor Gregory. They consist of much altered and contorted cherty beds, full of thin, ramifying quartz veins, and of jaspers coloured red, green, yellow, etc., associated with interbedded and intrusive diabases, serpentines, porphyrites, agglomerates and tuffs. Similar rocks occur in the Mount Camel Range, past Toolleen, as far as Lake Cooper; in Gippsland, at Mount Tara, Accommodation Creek, near Mount Deddick, Limestone Creek, Nowa Nowa; at Green Hill and the Dog Rocks, near Geelong; and possibly at Waratah Bay, Mount Wellington, and near Wood's Point. They are separated from the Ordovician rocks by a distinct unconformity.

Gold, silver, copper, lead, zinc, and iron ores have been found associated with this series. Iron ores may be mentioned at the Iron Mask mine, near Mount Tara, Nowa Nowa, and Dookie.

Distinct from the typical Heathcotian series, but probably Cambrian, are the phosphatic rocks of Mansfield. The phosphate is wovellite (phosphate of alumina). Barytes in veins and lodes is of common occurrence.

(*b*) *Ordovician.* Beds of this age outcrop at the surface over two considerable areas, one in the eastern part of the State and the other west of the meridian passing through Melbourne. They are composed of fine to coarse-grained sandstones, grits, slates, and shales, with rare thin beds of limestone and occasionally conglomerate, and are bent into a series of synclinal and anticlinal folds, much faulted. The two Ordovician areas together cover about one-fifth of the State. They are of vast thickness, but there is no reliable data on which to base an estimate.

The Ordovician is the gold-bearing formation of Victoria. Most of the gold, since its discovery 55 years ago, has been won from quartz reefs in these rocks, or from alluvial deposits formed from their disintegration. The western area is the richer of the two, and includes such famous goldfields as Ballarat, Bendigo, Dunolly, Castlemaine, Maryborough, etc. The usual matrix of the gold is quartz.

Bendigo is famous for its saddle reefs—quartz reefs that conform to the bedding in the arches of the anticlinal folds. These occur one beneath the other, and have been worked from the surface down to a depth of 4250 feet. Along the anticlinals they have been traced for about 20 miles. A feature of this goldfield is the occurrence of basic dykes (limburgite) along the axis of the anticlines. The Berringa goldfield is marked by similar features.

Ballarat is remarkable for the vast quantity of gold which has been yielded from its deep and shallow alluvial deposits from the date of its discovery to the present time. Some of the nuggets were of great size.

A feature of the reef gold in Ballarat is that it occurs in connection with "indicators." These indicators are certain "beds," that are interlaminated with the usual slates, mudstones, sandstones, etc. When a quartz vein cuts across an indicator it is usually found to be enriched at the point of intersection. The other portions of the vein may be barren or very poor.

(*c*) The Tarnagulla district has long been famous for large gold nuggets, and has lately had public attention redirected to it by the Nick o' Time and Poseidon rushes. Probably these masses of gold come from indicator lines, but so far they have only been found in alluvial deposits. It is reasonable to expect that similar masses of gold remain in their original matrix. Other localities for large nuggets are Moliagul, where the "Welcome Stranger" nugget (2315 ozs.) was found and sold at the local bank for £9436 16s. 8d.; Rheola, or Berlin rush, also is famous for its great nuggets.

Intrusions of granitic rocks are frequent in the Ordovician series, and they are also cut through by numerous acid and basic dykes.

(*d*) *Ordovician Fossils.* The following are amongst the typical fossils:—Upper Ordovician: ***Stephanograptus gracilis*, *Dicellograptus elegans*, *Climacograptus bicornis*, *Glossograptus hermani*.** Lower Ordovician: *Dictyonema pulchellum*, *Didymograptus caduceus*, *Tetragraptus serra*, *T. quadribrachiatus*, *Goniograptus macer*, *Clonograptus rigidus*, *Trigonograptus wilkinsoni*, *Phyllograptus typus*, *Siphonotreta maccoyi*, *Saccocaris tetragona*, *Rhinopterocaris maccoyi*, *Dinesus ida*.

(*e*) *Silurian.* The Silurian rocks occur between the two great Ordovician outcrops, and occupy about half the area of the latter. They are divided into the upper, or Yeringian, and the lower, or Melbournian, series. Members of the upper division occur in the extreme east of the State at Limestone Creek, and at Wombat Creek, Mitta Mitta River.

The beds consist of varieties of sandstone, slate, mudstone, etc. Some of the sandstones are reddish or purple in colour, and in other respects differ from those of Ordovician age in general appearance. They are bent into folds, but not so sharply and evenly as those of Bendigo. Quartz veins are less frequent than in the Ordovician rocks, and auriferous quartz reefs are generally associated with dioritic dykes, and are often exceptionally rich, as at Wood's Point, Walhalla, etc. Copper ore, associated with platinum, is found in a dioritic dyke at the Thomson R., near Walhalla. The goldfields, however, are generally less extensive than those in the older rocks.

Limestones occur in lenticular patches of considerable extent in the upper part of the Silurian series at Lilydale, near Mansfield, Mitta Mitta, Limestone Creek, etc. Lilydale supplies Melbourne with large quantities of lime.

(*f*) *Silurian Fossils.* Some of the characteristic fossils are given below:—Upper series (Yeringian):—*Favosites grandipora*, *Pleurodictyum megastomum*, *Chonetes robusta*, *Strophonella euglyphoides*, *Leptæna rhomboidalis*, *Pentamerus australis*, *Atrypa reticularis*, *Panenka gippslandica*, *Conocardium costatum*, *Cyclonema lilydalensis*. Lower Series (Melbournian): *Urastrella selwyni*, *Palæaster smythi*, *Protaster brisignoides*, *Botryocrinus longibrachiatus*, *Siphonotreta australis*, *Chonetes melburnensis*, *Nucleospira australis*, *Hyolithes spryi*, *Cyphaspis spryi*, *Homalonotus harrisoni*, *Dalmanites meridianus*, *Pterygotus australis*.

(*g*) *Devonian.* The principal mass of Devonian rocks lies between Briagolong and Mansfield. Sandstones, conglomerates, shales and limestones form the series. The sandstones are frequently red or purple and often mottled. The conglomerates are well developed near Mansfield, where they are several hundreds of feet thick, and are not folded. A remarkable feature of the conglomerates is the manner in which the pebbles are impressed into one another near Stockyard Creek, on the Dargo road, E. Gippsland.

Considerable areas of limestone of this age occur, the best known being at Buchan. The limestone tract here is 15 miles long and 6 miles wide. Caves have been known in this district for a number of years, and some discovered lately are said to rival the Jenolan Caves in beauty and extent. Valuable marble occurs. At Bindi also a considerable area occurs.

The soil from the sand stones and conglomerates is very poor, but the shales and limestones are covered with a very fertile soil.

(*h*) *Devonian Fossils.* The following are some typical fossils. Upper Devonian :—*Archæopteris howitti, Syhenopteris iguanensis, Cordaites australis.* Lower Devonian :—*Receptaculites australis, Favosites multitabulata, F gotlandica var. moonbiensis, Syringopora spelæanus, Chonetes australis, Spirifer yassensis, S. howitti, Phragmoceras subtrigonum, Asterolepis australis.*

(*i*) *Carboniferous.* The Devonian rocks appear to pass without an unconformity into the Carboniferous series. These beds consist of shales and sandstones of reddish colour and contain abundant fish and plant remains. They are best known to the north of Mansfield.

(*j*) *Carboniferous Fossils.* Some Carboniferous fossils are *Lepidodendron australe, Gyracanthides murrayi, Acanthodes australis, Eupleurogus cresswelli, Strepsodus decipiens, Ctenodus breviceps, Elonichthys sweeti, E. gibbus.*

(*k*) *Permo-Carboniferous.* The glacial conglomerates at Bacchus Marsh, Derrinal, Springhurst, Wooragee, Loddon Valley, and elsewhere are of very late Carboniferous or perhaps Permian age. The glacial conglomerates consist of pebbles and boulders, some rounded and grooved, some still fairly angular, set in a fine tough clay matrix. The size of the boulders varies from several tons down to fine gravel. As a rule there is no stratification, but in places the boulder clay shews signs of rough bedding. This series appears to correspond with the Duyka conglomerate of South Africa.

Above the glacial series at Bacchus Marsh are thick bedded sandstones containing *gangamopteris, glossopteris,* etc.

In the west of the State the Grampians are formed of massive white siliceous sandstones, with occasional small pebbles of quartz. They rest unconformably on the Ordovicians, and are not contorted, but no fossils or other means of determining their relative age have been found. They may belong to the same series as the Bacchus Marsh sandstones.

The glacial beds yield a soil of good quality for grazing purposes.

(*l*) *Permo-Carboniferous Fossils.* Some characteristic fossils are as follows :—*Tæniopteris sweeti, Gangamopteris obliqua, G. spatulata, G. angustifolia, G. cyclopteroides.*

(iv.) *Mesozoic.* So far as is known the Triassic and Cretaceous systems are not represented by any formations in Victoria, but the Jurassic system is of great importance, as it contains black coal measures.

(*a*) *Jurassic.* There are three considerable Jurassic areas exposed—those of South Gippsland, the Cape Otway District, and in the neighbourhood of Merino, in the extreme western part of the State. These three outcrops probably form part of a once continuous belt of similar rocks which is marked in the districts between them by Cainozoic sedimentary and volcanic rocks.

The rocks consist of felspathic sandstones, shales, and mudstones, while conglomerates occur along the coast near Kilcunda. Plant remains are common, and seams of black coal up to four feet thick are being worked in South Gippsland. These rocks are much disturbed and faulted, adding greatly to the difficulties of coal mining. Dykes and sills of basalt, as well as some old volcanic necks of early Cainozoic age penetrate the rocks.

(*b*) *Jurassic Fossils.* Amongst the characteristic fossils are :—*Coniopteris hymenophylloides var. australica, Cladophlebis denticulata var. australis, Sphenopteris ampla, Thinnfeldia odontopteroides, T. maccoyi, Tæniopteris spatulata* and *vars. daintreei* and *carruthersi, Ginkgo robusta, Baiera subgracilis, Podozamites barkleyi, Palissya australis, Brachyphyllum gippslandicum, Unio stirlingi.*

(v.) *Cainozoic.* The Cainozoic series, as represented in Victoria, is as follows:—

(*a*) *Eocene.* Beds of marls, clays, sandstones, and limestone of Eocene age are exposed along the littoral of Port Phillip at Geelong, Mornington, etc., and inland at Royal Park and along the Moorabool Valley. The limestone is used for building purposes, both as lime and as building stone. and for filters, and the marl at Mornington would form a valuable fertiliser for poor sandy soil.

(*b*) *Miocene.* Miocene clays, sands, conglomerates, etc., occur in the Moorabool Valley, near Morrison's, Melton, Altona Bay, Pitfield, in the La Trobe Valley, Cobungra, and at Feathertop, under the basalt of the Dargo high plains, étc. The brown coal beds are sometimes of enormous thickness. At Morwell a bore 1000 feet deep passed through 888 feet of brown coal. Many of the clays are valuable for pottery purposes, and they occur in very large quantities.

(*c*) *Pliocene.* The Pliocene period is represented in Victoria by sand dune formations and impure limestones near the coast, and by silt, sand, clay and gravel inland.

On the goldfields there are two distinct gravel formations, known as the Older and Newer Pliocene. The Older Pliocene gravels are generally composed of well-rounded quartz pebbles, bound together by clay or ferruginous cementing material. They cap the hilltops or occur in deep leads at levels of 300 or 400 feet below the present surface. They are frequently highly auriferous. The old deep leads were the drifts in ancient river valleys, and have since been covered to great depths by more modern silts, or by flows of basalt. Valuable deposits of clay occur of this age.

The Newer Pliocene of the goldfields consists of some highly rounded pebbles derived from the Older Pliocene mixed with sub-angular and angular pebbles, bound together by red, purple and grey mottled clays and drift material. The gravels are often highly auriferous. The Newer Pliocene beds are found at a lower level than the older gravels which cap the hilltops.

Sands which may be of Pliocene age cover a large area in the Mallee district. Soil from the Pliocene rocks is generally of poor quality.

(*d*) *Post-Pliocene.* River terraces composed of red loam are found in the principal valleys as at Wangaratta, Carisbrook, etc. They contain Diprotodon remains indicating a fauna now extinct. These beds are most suitable for brickmaking, and yield a soil of good quality.

(*e*) *Pleistocene Fossils:—Ostrea angasi, Mytilus planulatus, Tellina delloidalis, Natica conica, Vermetus novæhollandiæ, Pagrus unicolor, Sthenurus atlas, Macropus titan, Diprotodon longiceps, Phaseolomys pliocenus, Sarcophilus ursinus, Canis dingo.*

(*f*) *Recent.* Under this heading come the present river drifts, the shifting sand dunes along parts of the coast, the deposits filling swamps such as Koo-Wee-Rup and Carrum, the surface limestone found over wide areas in the Mallee, and the surface in process of formation. The soils range from the most fertile to the most barren.

(*g*) *Fossils.* According to Mr. Chapman[1] "The Tertiaries are here grouped under their several local horizons. In the present condition of our knowledge of the Tertiary stratigraphy of the State, about the succession of which there are yet varieties of opinion, it is impracticable to exactly indicate the equivalence of the strata to the various series defined in European areas."

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[1] F. Chapman, Esquire, A.L.S., F.R.M.S., Palæontologist to the National Museum of Victoria, who has supplied the lists of typical fossils.

Some of the characteristic Tertiary fossils in descending order are:—*Spondylostrobus smythi*, *Eucalyptus pluti*, *Plesiocapparis prisca*, *Bathyactis beaumariensis*, *Glycimeris halli*, *Trigonia howitti*, *Zenatiopsis angustata*, *Tylospira coronata*, *Voluta masoni*, *Cancellaria wannonensis*, *Cestracion cainozoicus*, *Oxyrhina hastalis*.

Coprosmæphyllum ovatum, *Cyclammina complanata*, *Deltocyathus subviola*, *Graphularia senescens*, *Cassidulus australiæ*, *Terebratulina catinuliformis*, *Limopsis insolita*, *Spondylus gæderopoides*, *Spirulirostra curta*, *Carcharadon auriculatus*, *Squalodon wilkinsoni*, *Biphius geelongensis*.

Cinnamomum polymorphoides, *Laurus werribeensis*, *Operculina complanata*, *Plectroninia halli*, *Plæstrochus deltoideus*. *Magellania grandis*, *Arca celleporacea*, *Crassatellites dennanti*, *Chama lamellifera*, *Cypræa eximia*, *Galeocerdo davisi*, *Lamna apiculata*.

(vi.) *Plutonic.* A feature in the distribution of the granitic rocks is the manner in which the outcrops occur distributed over the whole State, except where the surface consists of Tertiary or Jurassic rocks which conceal the plutonics. There are many varieties of the granitic rocks, such as granites, granodiorites, syenites, hornblende diorites, gabbros, etc. Auriferous quartz veins occur in the granodiorite rocks at Glen Wills, Mt. William and Warburton; tin lodes at Beechworth, Cudgewa and Coetong; copper at the Snowy River and in other parts of E. Gippsland; galena at Mt. Deddick and at Pine Mountain, Upper Murray. The soil derived from granitic rocks is generally of poor quality. The granodiorites yield a somewhat better soil than the other varieties.

(vii.) *Volcanic.* (*a*) *Diabases.* Interbedded lava flows, ash beds and agglomerates occur in the Heathcotian, which, as already mentioned, is a formation older than the Ordovician. These rocks are well represented at Heathcote and in the Mt. Camel Range, at the Dog Rocks near Batesford, Green Hill near Geelong, etc. Soil of moderate quality.

(*b*) *Snowy River Porphyries.* These acid volcanic rocks of Lower Devonian age (?) are widely distributed in Eastern Gippsland, along the course of the Snowy River and in the Mitta Mitta Valley. With the lavas there is a great thickness of ash and agglomerate, which contain lodes of gold, copper, and silver-lead ore. Extremely beautiful porphyries occur in these rocks. The soil is poor.

(*c*) *Dacites.* The age of the Dacite series is not settled. They form the mountains at Healesville and Warburton, Dandenong Range, Mt. Macedon, and part of the Strathbogie Ranges. No metallic lodes have been found associated with these rocks. The soil varies from a rich loam to a poor siliceous sand.

(*d*) *Basalts.* The oldest basalt known in the State is that described by Dr. Howitt as interbedded with the Upper Devonian at Snowy Bluff, but the important basalts are of Tertiary age.

The Older Basalt (Eocene to Pliocene) is found at Dargo High Plains, Gelantipy, Warragul, Narracan, the Mornington Peninsula, Phillip and French Islands, etc. The soil is fertile, but the area occupied is insignificant when compared with the area covered by the Newer Basalts.

The Newer Basalts (Pliocene to Recent) extend to the north-west and west of Melbourne for almost 200 miles. This volcanic series forms vast plains of lava flows and ashes with numerous scattered scoria cones in all stages of preservation. Excellent building stone and good road metal is furnished by these volcanic rocks. The soil varies from a poor loam to dark brown and black clayey soils of marvellous fertility.

4. **Geology of Queensland.**[1]—From a geological point of view Queensland may be divided into two great parts, occupying nearly equal areas, but possessing very different physical features. One of these extends along the eastern coast, from the New South

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[1] This article is slightly condensed from one by W. H. Rands, Esquire, A.R.S.M., F.G.S., Government Geologist of Queensland.

Wales border northwards to the 12th parallel of latitude, has an average width of about 200 miles from east to west, and is well watered and timbered. To this division also belongs an area in the north-west portion of the State, viz., in the Burke district, extending from the extreme north-west southwards to Cloncurry and Boulia. The loftiest mountain ranges occur in this division, the remnants of what was once a high tableland, the highest peak, Bellenden Ker, attaining an elevation of 5150 feet.

This region consists of stratified rocks of different ages, from the oldest palæozoic—the exact age of older rocks has not yet been determined—up to those of recent origin. There are also large areas of granites, porphyries partly of igneous and partly of metamorphic origin, as well as other intrusive and interbedded igneous rocks. It is in this division that most of the mineral wealth of the State exists.

The other large division, known as the Western Interior, consists almost entirely of the Lower Cretaceous Rocks, overlaid unconformably in places by the Desert Sandstone, which is of Upper Cretaceous Age.

This division, locally known as the Rolling Downs Formation, presents a vast area, in parts of almost treeless plains, with here and there clumps of "gidya" scrub.

The rainfall over this division, more especially in the south-west, is small. The river beds are generally dry. The want of water limits the use of some of the very best pastoral land in the State, though this difficulty has been partially overcome by the tapping of the supplies of artesian water contained in the Lower Cretaceous Beds.

The rivers to the north of the high open downs, in latitude about 21° 50′ S., flow in a northerly direction into the Gulf of Carpentaria, while south of this they flow in a southerly, or south-westerly direction, into New South Wales.

(i.) *Geological Formations of Queensland.* The following table indicates the geological formations so far known as occurring in Queensland:—

QUATERNARY AND CAINOZOIC ...	Recent Alluvia, Raised Beaches, Post-Tertiary or Tertiary Alluvia, and Bone-Drifts.
MESOZOIC	Upper Cretaceous—Desert Sandstone. Lower Cretaceous—Rolling Downs Formation; Blythesdale Braystone. Trias-Jura System—Upper, Ipswich Formation; Lower, Burrum Formation.
PALÆOZOIC	Permo-Carboniferous—Upper Bowen Formation; Middle Bowen Formation; Lower Bowen Formation; Star Formation; Gympie Formation. Devonian—Middle Devonian Formation. Silurian—Silurian Formation. Age undetermined—Slates, Schists, and Quartzites, etc.

(ii.) *Plutonic and Metamorphic Rocks.* Large areas of granites, syenites, porphyries of both plutonic and metamorphic origin and of different ages, extend from the south to the north of the State.

In these, a number of mineral areas are included, viz.:—The Charters Towers, the Croydon, Etheridge, Eidsvold, Normanby, Jimma goldfields; the Ravenswood gold and silver fields; Kangaroo Hills and Running Creek silver and tin fields; the Herberton and Annan, Bloomfield, and Stanthorpe tinfields; and the Mount Perry copper field.

(iii). *Metamorphic Rocks.* These, embracing the slates, schists, etc., of undetermined age, are all older than the Burdekin Beds—Middle Devonian—and are all more or less metamorphosed. They consist of metamorphic granites, quartzites, slates, schists, gneisses, and shales. No fossils have up to the present been discovered in them, and their exact age has not yet been ascertained.

The principal mining areas in connection with these rocks are:—The McKinlay, Cape River, Gilbert and Woolgar, Coen, Normanby, Clermont, and Peak Downs goldfields; and the Peak Downs copper field.

(iv.) *Silurian.* A large region in the north-west part of the State, formerly included in the slates and schists, etc., of undetermined age, were transferred to the Silurian, the evidence as to the age of the rocks being determined by Mr. R. Etheridge, junr., from certain fossils found near the Cairns Range.[1]

The area mapped as Silurian extends from the south of Boulia to the extreme north-west, and from 20 miles east of Cloncurry to the western boundary of the State, but its boundary has not yet been accurately mapped.[2]

The principal mining areas are the Cloncurry, McKinlay, and Leichhardt goldfields, the Cloncurry copper fields, and the Lawn Hills silver field. There are also the rich ironstone deposits of Mount Leviathan, and of the other hills in the neighbourhood of Cloncurry.

(v.) *Middle Devonian* (Burdekin Formation). Rocks containing characteristic fossils of the Middle Devonian occur in various parts of the State. The principal area, and the one from which the formation takes its name, is on the Upper Burdekin, including the Fanning River, Burdekin Downs, and Broken River. Rocks of this age also occur at Chillagoe; Reid's Gap; on the Townsville-Charters Towers Railway; south of Clermont; at Raglan; and in the neighbourhood of Olsen's Caves, north of Rockhampton.

A doubtful area is shewn on the last edition of the State map in the extreme north-west, in the neighbourhood of Camooweal.

The fossils occur in limestones, and consist almost entirely of corals, with a few Brachiopoda, and one Cephalopod. The most characteristic fossils are *Heliolites porosa, Pachypora meridionalis, Aulopora repens, Stromatopora, and Cystiphyllum.*

The Argentine silver field occurs in a series of slates and schists, etc., supposed to belong to this formation.

(vi). *The Permo-Carboniferous System.* The greater portion of the stratified rocks of the eastern portion of Queensland are included in this system.

The system, as hitherto classified, includes five formations, beginning from the oldest, viz.: (1) Gympie Formation, (2) Star Formation, (3) Lower Bowen Formation. (4) Middle Bowen Formation, (5) Upper Bowen Formation.

A reclassification of these rocks may be found necessary; the following has been suggested :—

GYMPIE ...	... Marine Series
(?) ...	... Basic and Acidic Intrusions
LOWER BOWEN ...	... Lower Marine and Volcanic Series; Lower Fresh Water Series; Upper Marine Series; Upper Freshwater Series.
UPPER BOWEN ...	... Marine Series; Freshwater Series; Old Alluvial Deposits.

(*a*) *The Gympie Formation*, named after the type district (the Gympie goldfield), occupies large areas in the south-eastern, central, and north-eastern parts of the State, and consists chiefly of sandstones, grits, conglomerates, indurated shales, and limestones. These, in parts, have undergone considerable alteration. Bedded volcanic rocks are numerous, especially in the type district, as are also intrusive rocks. The strata generally dip at high angles of inclination.

This contains a very scant flora, represented by Calamites, Lepidodendron: but it has produced the largest fauna of any formation in Queensland, over 120 species having been described. The following genera are peculiar to it, viz. :—

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[1] These were identified as follows :—(1) Orthoceratites, sp. ind.; (2) Actinoceras (beaded siphuncle), sp. ind.; (3) Univalve and bivalve (casts and impressions). These are interesting, as the first Silurian fossils found in Queensland.

[2] See the Geological Map of Queensland of 1899.

Protozoa.—Lasiocladia.
Actinozoa.—Zaphrentis, Cyathophyllum, Cladochonus, Monticulipora.
Blastoidea.—Mesoblatus, Granatocrinus, Tricœlocrinus.
Echinoidea.—Archæocidaris.
Crustacea.—Griffithides.
Polyzoa.— Glauconome, Rhombopora, Myriolithes.
Brachiopoda.—Martinia, Athyris, Lingula.
Pelecypoda.— Pterinopecten, Mytilops, Parallelodon, Nucula, Pleurophorus, Astartella, Cypricardella, Eurydesma, Conocardium, Edmondia, Sanguinolites.
Gasteropoda.—Loxonema, Euomphalus, Pleurotomaria, Yvania, Luciella, Murchisonia, Bucania.
Pteropoda.—Conularia.
Cephalopoda.—Nautilus, Gyroceras.
Pisces.—Deltodus ?

Several gold and other mineral fields occur in the Gympie formation, amongst which may be mentioned :— The Gympie goldfield, Cania, Calliope, Norton, and other goldfields in the Gladstone district; the goldfields of the Rockhampton district; the Warwick goldfields; Paradise, Hodgkinson, Mulgrave, and Palmer goldfields. Copper deposits at Glassford Creek, Gigoomgan, Gooroomgan, and Mount Coora; some mercury deposits at Kilkivan; and the Neerdie antimony mine.

(*b*) *The Star Formation.* The palæontological evidence for separating these beds from the Gympie Series is slight. They contain nineteen species peculiar to themselves, and twelve species common to both, but are, however, less highly inclined than the Gympie Beds, and have been less disturbed and altered.

They are best developed at the following places :—Near the junction of the Great and Little Star Rivers, from which they take their name; near Dotswood, Keelbottom Creek; in the neighbourhood of Harvest Home, Lornesleigh, and Mount McConnell Stations (near the latter the nearly complete remains of a fish of the genus Palæoniscus was found); and at Drummond's Range, where numerous scales and teeth of fish occur.

The flora includes species of Calamites, Asterocalamites, Lepidodendron, Cyclostigma, Stigmaria, and Cordaites. The fauna is comparatively small when compared with that of the Gympie Beds, and includes the following genera :—

Crinoidea.—Actinocrinus.
Crustacea.—Beyrichia, Phillipsia.
Polyzoa —Fenestella.
Brachiopoda.—Spirifera, Spiriferina, Retzia, Rhynchonella, Orthis, Strophomena, Chonetes.
Pelecypoda.—Entolium, Euchondria, Nuculana.
Gasteropoda.—Naticopsis, Porcellia.
Cephalopoda.—Orthoceras.
Pisces.—Palæoniscus.

(*c*) *The Lower Bowen Formation.* This formation consists of a series of white and yellow sandstones, with beds of conglomerates, containing pebbles of quartzite and porphyry, derived from the metamorphic rocks in the vicinity : the lowest beds, seen near the heads of Pelican Creek, south-west of Bowen, consisting of volcanic agglomerates. It dips under the Trappean rocks of Toussaint, Mount Dinlin, and Mount Macedon.

In another area, north of Mackay, the beds have undergone considerable alteration. So far no fossiliferous remains have been found therein.

(*d*) *The Middle Bowen Formation.* This series overlies the last without any marked unconformity. It consists of alternate sandstones, blue and grey shales, and impure arenaceous ironstones, and extends from the type district on the Bowen River across the central railway between the Emerald and Duaringa, and for about 120 miles farther south up to the Dawson and Comet Rivers. The mapping out of these beds in detail on both sides of the central railway suggested the need for an alteration in the classification previously referred to.

Seams of coal have been discovered therein, both north and south of the railway line, one thirty miles south of Duaringa being 9 feet thick of perhaps the best coal for steam purposes in the State; it is anthracitic, containing almost 87 per cent. of fixed carbon. Several seams of coal—most of them are of a burnt or coked nature—occur in the type district; this is due to the intrusion of sheets of trap-rock.

Although it contains a land flora in places the Middle Bowen is mainly marine. The flora include species of *Glossopteris* (which is very common), *Sphenopteris*, and a species of *Conifer*.

The fauna consists of over fifty described species, of which the most characteristic fossils are:—*Strophalosia clarkei*, Eth.; *Strophalosia gerardi*, King; and *Derbyia senilis*, Phill., which, with species of *Productus*, *Spirifera*, and *Martinia*, are very common.

(*e*) *The Upper Bowen Formation*. The Upper Bowen Beds are chiefly fresh water, and contain but very small flora and fauna. The flora includes *Phyllotheca australis*, *Sphenopteris lobifolia*, *S. flexuosa*, *S. crebra*, *Glossopteris browniana*, *G. linearis*, and a species of a *Conifer*. The fauna includes *Derbyia senilis*, *Productus brachythœrus*, and a species of *Goniatites*.

The rocks have a low angle of dip in the type district, and cover a large area to the south of these creeks. They contain numerous coal seams, including the Macarthur, Daintree, and Havilah seams, but most have been destroyed by the intrusion of sheets of dolerite.

Beds of this formation occur west of Laura, on the Cooktown railway, on the Little River coalfield; at Hamilton, about twenty miles west of Cooktown; at Stewart's Creek, near Townsville, also further south near Mackay; and at Blair Athol, ten miles north-west of Clermont. Blair Athol is the only place where the coal seams of this formation are actually being worked; the coal is one of the best steam coals worked in the State.

(vii.) *Lower Trias-Jura* (the Burrum Formation). The Burrum Formation, the lowest member of Mesozoic rocks, extends along the coast from a point about 50 miles north of Bundaberg to south of Noosa Heads, and occupies an area of 3000 square miles.

Over the greater portion of this area the coal measures are covered unconformably with sandstones, clays, and conglomerates of a more recent age, a fact to which is attributable the flat and barren nature of the country. The overlying rocks, 20 to 50 feet in thickness, lie horizontally or nearly so. Their exact age has not been determined, as no fossils have been found in them.

This formation consists of grey and brown sandstones, conglomerates, and grey and black shales, etc. The flora and fauna are both very scant. The former includes:—*Sphenopteris flabellifolia*, var. *erecta*, T. Woods; *Trichomanites laxum*, T. Woods; *Thinnfeldia media*, T. Woods; *Tæniopteris daintreei*, McCoy; *Alethopteris australis*, Morris; *Podozamites kidstoni*, Eth. fil.; *Otozamites*, sp. ind., and *Baiera bidens*, T. Woods. The fauna is represented by *Corbicula burrumensis*, Eth. fil., and *Rocellaria terra regina*, Eth. fil.

Seams of coal are known to occur in these measures in Littabella Creek, north of Bundaberg, to near Noosa, in the southern portion of the field, and have been worked near the Burrum River in the neighbourhood of the townships of Howard and Torbanlea, situated about 20 and 15 miles respectively north and north-west of Maryborough.

In the Burrum River, just above the railway bridge, five seams of coal of payable thickness can be seen cropping out in the bank within a distance of half a mile, with a regular dip to the north-east at about 12 degrees.

(viii.) *Upper Trias-Jura* (the Ipswich Formation). The Ipswich Coal Measures cover an area of about 12,000 square miles in the south-eastern portion of the State, a small area occurring in the neighbourhood of Stanwell and Wycarbah, in the Rockhampton district; and another on Callide Creek, south-west of Gladstone, where there is one seam of over 80 feet in thickness of solid coal.

The rocks consist of the usual alternations of sandstones, conglomerates and shales, etc. In the neighbourhood of Brisbane the base of the measures is a volcanic ash, consisting of a felspathic matrix with blebs of quartz, and angular pebbles of schist and quartz. This stone is largely used for building purposes, as are also certain of the sandstones and freestones from this formation.

On the western portion of this area at Gowrie, Jimbour, and Clifton, the coal measures are on a higher horizon to those in the Brisbane and Ipswich district, from which they are separated by a thick mass of basalt.

The flora of the Ipswich Formation contains over 80 known species, five of which are common to the Burrum beds.

The fauna is represented by four species only, viz. :—*Estheria mangalensis*, Jones ; *Mesostigmodera typica*, Eth. fil. and Oliff; *Unio ipsviciensis*, Eth. fil. ; and *Unio eyrensis*.

Several seams occur in the Albert and Logan district, south of Brisbane, and thin coal has been met with close to Brisbane, but no mines have been opened up in either of these localities.

(ix.) *Lower Cretaceous Formation* (the Rolling Downs Formation). The strata of this formation, covering nearly the whole of the western interior, have a very great sameness over this immense area—equal to over half of the whole State—and consist of shales, sandstones, conglomerates, and thin limestones. Thin beds of coal have been met with in boring.

A very porous bed of sandstone—the Blythesdale Braystone—has been traced from the neighbourhood of Texas, on the southern border of the State, to Normanton, in the north of the Gulf of Carpentaria. This is the chief intake rock of the series from which the supply of artesian water is obtained.

The volume of flow of the many rivers that run across or along this sandstone greatly diminishes, shewing that it has absorbed the water. The efflux of the numerous bores, however, is very small when compared with the amount of water taken in by this rock and other porous beds that occur. It has been supposed that the water finds an outlet to the sea at the Great Australian Bight and at the Gulf of Carpentaria.

The Rolling Downs Formation has been classified under the general head of Lower Cretaceous, but it contains amongst its numerous fauna forms allied to the Oolite.

The fauna is represented by over 120 species. Ammonites and Belemnites make their appearance. Among the fish remains have been found the following species:—*Lamna daviesii*, Eth. fil.; *Lamna appendiculata*, Agassiz; a species of *Aspidorhynchus*, Agassiz; and *Belonostomus sweeti*, Eth. fil. and A. S. Woodw. There are also the following reptilian remains:—*Notochelone costata*, Owen; *Ichthyosaurus australis*, McCoy; *Ichthyosaurus marathonensis*, Eth. fil.; *Plesiosaurus macrospondylus*, McCoy; *Plesiosaurus sutherlandi*, McCoy.

(x.) *Upper Cretaceous* (Desert Sandstone Formation). This formation at one time covered the greater portion of Queensland, but the work of denudation has left only isolated patches, or outliers, which overlie unconformably the older rocks. Some of these patches are of large extent, especially in the western districts, where they overlie and act as feeders to the Lower Cretaceous water-bearing beds.

The base of the Desert Sandstone, from 1000 to 1800 feet above the sea-level in the southern and central portions of the State, at Cape York Peninsula is nearly at that level.

The beds are always horizontal, or nearly so, and consist usually of very coarse sandstones (often false-bedded), coarse conglomerates, shales, and magnesite shales.

A series of rocks in the neighbourhood of Maryborough, overlying the Burrum Coal Measures, against which they have been faulted, have been included in this formation. They have produced a large number of fossils, some of which are allied to those from the Desert Sandstone at Croydon. Except at these places, the formation is almost barren of fossiliferous remains.

Glossopteris was discovered in rocks of this age at Betts Creek, near the Cape River goldfield, but had not before been discovered in Australia later than in the Permo-Carboniferous. *Glossopteris* was also found in the tableland between the Mitchell and the Walsh Rivers, and was consequently ascribed to the Carboniferous, though these rocks have since been found to be Upper Cretaceous. The genus makes its reappearance, therefore, in this formation, as it has not been detected in the formations intervening between this and the Permo-Carboniferous.

The fauna and flora are represented by thirty-five species, of which only the following eight species have been found outside the Maryborough rocks, and all of these, except the *Glossopteris*, are from Croydon:—*Didymosorus? gleichenioides*, Oldham and Morr.; *Glossopteris browniana*, Brong.; *Rhynchonella croydonensis*, sp. nov.; *Ostrea*, sp. ind.; *Placuna*, sp. ind.; *Maccoyella barklyii*, var. *Mariæburiensis*, Eth. fil.; *Teredo*, sp. ind.; *Siphonaria samwelli*, sp. nov.

The only mineral of commercial value from these beds is the opal, for which there is now a considerable demand. Its chief sources are Opalton, Mayne River, Opal Range, Jundah, Duck Creek, Nickavilla, and Listowel Downs.

(xi.) *Tertiary.* The Tertiary deposits are very poorly represented in Queensland—in fact, with the exception of a few alluvial drifts and some raised beaches, no sedimentary deposits of this age are known.

There was undoubtedly great volcanic activity at this period, as is evidenced in many parts of the State by the outflows of basalt capping the Desert Sandstone.

(xii.) *Post-Tertiary and Recent.* This period is represented by bone-drifts on the Darling Downs; Peak Downs; at Maryvale Creek; and along the Burdekin River, etc. They have furnished numerous remains of living and extinct marsupials, such as *Diprotodon australis*, *Macropus titan*, *Macropus ajax*, and other species of the same genus; *Thylacoleo*; several species of *Phascolomys*, and *Nototherium*, etc.; a struthious bird *Dromornis*; *Dinornis*, and the remains of reptiles and fishes.

The deposits in the Chillagoe Caves of North Queensland, and in the Olsen and Johansen Caves near Rockhampton, have also furnished a few bones, and may be expected to be a rich source of organic remains, when they come to be thoroughly explored.

5. **Geology of South Australia.**[1]—In order to elucidate this indication of the principal geological formations of the State of South Australia, a short description of its physical geography is necessary.

A main range extends from Cape Jervis in the south, the opposite point of the mainland to Kangaroo Island, to beyond Hergott Springs in the north, a distance of about 400 miles: branching from about 150 miles north of Adelaide to the New South Wales border in the vicinity of the Barrier Ranges, and from Beltana north-eastward to Mount Babbage. This area includes the Mount Lofty, Barossa, Flinders, Mount Nor' West and Willouran Ranges, and also smaller ones. The highest points are: Mount Lofty, 2327 feet; Mount Brown, near Port Augusta, 3200 feet; St. Mary's Peak, Wilpena, 3900 feet; and Benbonyathe Hill, near the Illinawortina Pound, 3476 feet.

The Tomkinson, Mann, and Musgrave Ranges extend in the north-west corner from the West Australian boundary eastward for over three degrees of longitude along and south of the 26th parallel of south latitude, the northern boundary of the State. The Gawler Ranges run from near Port Augusta westward for about 120 miles. Northward of these are the Warburton Ranges, isolated and of comparatively low elevation. Ranges of similar character are the Peake and Denison, west of Lake Eyre; and there are also detached areas in the vicinity of Port Lincoln and Franklin Harbour, on Eyre Peninsula. The remainder of the State consists of plain and undulating country, with occasional isolated low peaks.

The lakes, mainly large expanses of mud, are numerous and extensive, and occupy low-lying portions of the plain country; the principal ones are Lakes Eyre, North and South, Torrens, Gairdner, Frome and Blanche.

The Murray is the largest river. It enters the eastern boundary of the State in latitude 34°, runs eastward to Morgan, thence southward to its mouth at Encounter Bay, previously widening out into Lakes Alexandrina and Albert; this is the only navigable river in South Australia. The drainage from the eastern watershed of the main range, as far north as the Burra, runs into the Murray, from the western as far north as Port Augusta, into Gulfs St. Vincent and Spencer; further northward the eastern drainage is on to plains and into Lake Frome, and the Western into Lake Torrens; north of latitude 30° drainage from all sides is into Lake Eyre, the principal rivers being the Cooper and Diamantina entering from Queensland, the Finke from the McDonnell Ranges, Northern Territory, the Alberga and the Hamilton from the Musgrave Ranges, and the Neales and others from the westward. From the Musgrave Ranges southward to the Great Australian Bight, and the west coast of Eyre Peninsula, there are no lines of drainage of any importance on the surface.

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[1] This article is contributed by H. Y. L. Brown, Esquire. F.G.S., Government Geologist of South Australia.

The coast-line presents roughly a sweep north-westward from Cape Northumberland in latitude 38° S., to Eucla latitude 31° 30′ S., crossing 12 degrees of longitude (129° to 141°), deeply indentated by two gulfs, St. Vincent's and Spencer's. Kangaroo Island, immediately south of St. Vincent's Gulf, is the largest island of the State, and there are numerous smaller islands, grouped and separate, in Spencer's Gulf, and on the west coast as far as Fowler's Bay.

From Eucla to the head of the Great Australian Bight, the coast-line consists of continuous cliffs from 200 to 300 feet high, forming the edge of the Nullarbor Plain plateau.

The various geological formations will be referred to in ascending order.

(i.) *Archæan* (Metalliferous Rocks). Granite, gneiss, and crystalline metamorphic, hornblendic, micaceous and argillaceous rocks are found at several places, but to a limited extent, to underlie rocks containing Cambrian fossils; and in other places there are considerable exposures of granitic and gneissic rock containing granitic dykes of later age, which may also be Pre-Cambrian; these constitute the lower rock systems and may be classed as Archæan. Chief localities: Southern portion of Yorke's Peninsula, North-East, north end of Main Range, Musgrave Range, etc.

(ii.) *Pre-Cambrian and Cambrian* (Metalliferous Rocks). The Main Ranges from Cape Jervis to Mt. Babbage, the Ranges at Port Lincoln and Franklin Harbour, Kangaroo Island, the North-eastern (Olary) Ranges, Mt. North-west Ranges, the Peake and Dennison Ranges (near Lake Eyre), and isolated areas are composed of highly-contorted, faulted, cleaved, jointed and metamorphosed beds of micaceous, hornblendic and quartzose schists, sandstones, quartzites, argillites, clay slates, conglomerates, crystalline limestones and dolomites intruded into and intersected in places by igneous rocks consisting of granites; diorite, dolerite, gabbro, felspar, porphyry, felsite, etc. The Gawler Ranges are composed of granite and felspar-porphyry, the latter predominating, the Musgrave Ranges of granite, metamorphic and eruptive, and altered sedimentary rocks. Cambrian rocks containing fossils of undoubted Cambrian age, have been found in dolomitic limestone beds at Normanville, and Sellick's Hill, south of Adelaide, near Ardrossan, Yorke's Peninsula, near Gordon, Belton, Wirrealpa, Ajax Mine, and Ediacara in the far north, and east of Hawker. These beds occur in connection with those just mentioned, but owing to the intense plication, varying thickness, faulting and non-persistence of individual beds and metamorphism of the whole series, their exact stratigraphic relationship can only be determined by exhaustive geological survey and mapping.

(a) Pre-Cambrian and Cambrian Fossils. These are as follows, viz.:—*Ethmophyllum hindei*, *Coscinocyathus tatei*, *Microdiscus subsagittatus*, *Ptychoparia australis*, *Orthisina compta*, *Platyceras etheridgei*, *Stenotheca rugosa*, *Hyolithes communis*, *Protopharetra (?) scoulari*, *Olenellus pritchardi*, *Dolichometopus tatei*, *P. howchini*, *Ambonychia macroptera*, *Ophileta sublangulata*, *Salterella planoconvexa*, *H. conularoides*.

(iii.) *Ordovician.* Beds of quartzite, sandstone, grit, shale, and conglomerate dipping at low angles and often horizontal occur on Kangaroo Island, in the neighbourhood of Port Augusta, along the western side of Lake Torrens and on the Alberga River. No fossils have been found in them, but from the positions they occupy and their resemblance to the Ordovician fossiliferous rocks found south of the MacDonnell Ranges, they are probably of that age.

(iv.) *Jurassic.* This is represented by argillaceous, carbonaceous, and bituminous shale with thin bands of sandstone, limestone, ironstone, pyrites, etc., containing seams of coal. The best defined outcrop of this formation is at Leigh Creek, where a basin has been proved by boring to have an extreme depth of about 2000 feet of strata containing Jurassic fossils. In one bore at from 1496 to 1544 feet, over 47 feet of brown coal was passed through in one continuous bed, and small seams at intervals for 300 or 400 feet deeper. Characteristic fossils of the same age have been discovered at Ooroowillannie Swamp, near Kuntha Hill on Cooper's Creek, and bituminous shale and coal similar to that of Leigh Creek at Lake Phillipson and other places in bores put down for artesian water. There is no distinct line of demarcation between this and the overlying Lower Cretaceous formation. It is probable that the sandstone, gravel, and conglomerate in which this water occurs is of Jurassic age.

(*a*) *Fossils.* The fossils observed are:—*Alethopteris australis*, *Macrotæniopteris winamattæ*, *Oleandridum (?) fluctuans*, *Podozamites lanceolatus*, *Thinnfeldia odontopteroides*, *T. media*, *Unio eyrensis*.

(v.) *Lower Cretaceous.* These consist of gypseous clays, marls, argillaceous shales, and sandstones, with thin bands of limestone, ironstone, pyrites, etc., and sometimes thin seams of brown coal resting on sandstone and gravel conglomerate beds. This formation, with or without the underlying Jurassic beds, fills the vast artesian basin of which Lake Eyre is approximately the centre; from the north-east corner of the State it is continuous westward along the Queensland border and to slightly beyond the 134th meridian, and southward along the boundaries of Queensland and New South Wales to latitude 30° S. Westward of Lake Eyre, its boundary has not yet been determined, but probably does not extend very far in that direction; it is boundednorthw ard and southward by granite and other primary rocks.

The most western bore, viz., that at Lake Phillipson, has passed through a shale formation down to 3131 feet. The depth to which bores have been sunk in this area, and artesian water obtained, varies from a few feet in the vicinity of the outcrops of primary rocks to 4850 feet in that portion of the basin extending northwards towards the Queensland border.

(*a*) *Fossils.* The fossils observed are:—*Lingula subovalis*, *Pecten socialis*, *Pseudavicula australis*, *P. anomala*, *Maccoyella barklyi*, *M. corbiensis*, *Lima randsi*, *Pinna australis*, *Mytilus rugocostatus*, *M. inflatus*, *M. linguloides*, *Nucula quadrata*, *Cytherea clarkei*, *C. woodwardiana*, *Leda elongata*, *Mya maccoyi*, *Natica variabilis*, *Cinulia hochstetteri*, *Belemites australis*, *B. canhami*, *Crioceras australe*, and others.

(vi). *Mesozoic.* This is represented by argillaceous and arenaceous shales, grits, sandstones, quartzose sandstone, gravel, and conglomerate, with limestone and concretionary clay ironstone. The deposit, which is horizontal and undulatory, contains scattered pebbles and boulders of granite, quartzite, sandstone, etc. Some of these boulders are of great size, and denudation has led to their being scattered over the surface to a considerable extent. Bores have been sunk through the deposit to ascertain whether it contained coal, as from its general appearance and resemblance to carbonaceous rocks of the Cape Otway district, Victoria, which contain small seams of coal and are of Mesozoic age, it was thought that this might be the case. It may be noted that the Cape Otway beds also contain beds of pebble conglomerate, the pebbles consisting of granite, syenite, mica-schist, etc. The deposit is undoubtedly a glacial one. The greatest thickness proved by boring through these beds was 964 feet, at which depth clay slate of primary age was bottomed on. The area occupied by the deposit is considerable; the main body stretches across from Victor Harbour to Yankalilla, a distance of about twenty miles; it is of irregular shape, having a width in places of five miles, and lies in a trough between high ranges; its boundaries have not yet been completely defined, and it probably underlies a portion of the Miocene Tertiary lying north and north-westward of Crozier's Hill and other places in the hundreds of Encounter Bay, Goolwa, and Waitpinga. Between Yankalilla and Second Valley, and at Cape Jervis there are beds of clay and boulder drift which may be of similar age, and these may, however, have been reconstructed from them or deposited during Miocene times. On Kangaroo Island, in the hundred of Menzies, there is a similar deposit which consists of false-bedded horizontal and slightly-dipping beds of sandstone and grit, with pebble conglomerate layers on shale and sandy clay, containing concretionary masses of brown iron ore and ferruginous sandstone with pebbles, and overlaid unconformably by basalt; it appears to be an outlying area of the Yankalilla and Encounter Bay beds. No fossils have been found at any of these localities, but from the similarity of these beds to those of the Cape Otway district they may be provisionally classed as Mesozoic.

(vii.) *Lower Tertiary or Upper Cretaceous.* Chiefly in the north-eastern portion of the State there are large areas of stony downs and table-hill country where sheets and isolated cappings, as thin beds of sandstone, quartzite, conglomerate, jasper rock, porcelainised shale, etc., etc., overlie both the Lower Cretaceous and older rock formation, which are either of Lower Tertiary or Upper Cretaceous age. The beds are intermittent in character, and are scattered over an area extending from the end of the Musgrave Ranges eastward to the Queensland border, and southward to Lakes Frome, Torrens, and Gairdner, and westward towards the West Australian border, in which direction they occur as small and widely-separated exposures.

(*a*) *Principal Fossils.* The principal fossils are:—*Mantellia babbagensis* and *Zamites ensiformis.*

(viii.) *Eocene.* The Eocene Formation is represented by polyzoal coral and shell limestone, chalky limestone with flints, fossiliferous clays, calcareous sandstone, and shale.

(*a*) *Coastal Localities.* On the Murray River, from Bookmark downward to Murray Bridge, good sections of these rocks overlaid by Miocene strata are exposed; the Nullarbor plain, extending from Eucla to Denial Bay, and forming sea cliffs from 200 to 300 feet high between the head of the Great Australian Bight and the West Australian border; the coasts of Yorke's Peninsula, Ports Willunga and Noarlunga, Kangaroo Island, and other places to a less extent.

(*b*) *Localities Inland.* Near Ardrossan, McLaren Vale, Mount Jagged; at these places the beds are elevated to a height varying approximately from 200 to 700 feet above sea-level. On the Adelaide plains a bore at Croydon shewed a thickness of at least 2296 feet.

The deepest bore sunk for water on the Nullarbor plain penetrated a thickness of 500 feet of crystalline limestone and white chalky limestone with flints, succeeded by shale, gravel, etc., to 1387, where it bottomed on granite.

(*c*) *Fossils.* The characteristic fossils are:—*Magellania insolita, M. pectoralis, Magasella deformis, Salenia tertiaria, Scutellina patella, Cassidulis longianus, Lovenia forbesi, Fibularia gregata, Oxyrhina woodsii, Aturia australis, Voluta pagodoides, Fusus sculptilis, Turritella aldingæ, Natica aldingensis, Dentalium mantelli, Dimya dissimilis, Lima bassii, Pecten consobrinus, Pecten aldingensis, P. eyrei, P. flindersi, P. hochstetteri, Glycimeris cainozoica, Limopsis insolita, Chione cainozoica.*

(ix.) *Miocene.* This is represented by sand, clay, shale, loam, shell, limestone, sandstone grit, conglomerate, gravel, and boulder deposits. They fill the basins of ancient estuaries and old river beds, rising in the ranges and trending towards and into the sea, forming low cliffs along the coast and in its vicinity, and probably underlying newer formations at numerous places along the coast.

The oyster beds of the Murray Cliffs, Willunga, etc., are of this age.

(*a*) *Fossils.* The characteristic fossils are:— *Terebra crassa, Ancilla orycta, Latirus approximans, Marginella hordeacea, Murex anceps, Cominella sub-*

filicea, *Campanile triseriale*, *Semicassis subgranosus*, *Calyptræa crassa*, *Diastoma provisi*, *Heligmope dennanti*, *Natica subvarians*, *Ostrea sturtiana*, *Ostrea arenicola*, *Spondylus arenicola*, *Placunanomia jone*, *Pecten antiaustralis*, *P. palmipes*, *P. consobrinus*, *Lima semicostata*, *Lima jeffreysiana*, *Lithodomus brevis*, *Amussium lucens*, *Cucullæa corioensis*, *Mitylus submenkeanus*, *Cardita dennanti*, *Barbatia simulans*, *Meretrix sphericula*, *Trigonia acuticostata*, *Corbula ephamilla*, *Cardium mediosulcatum*, *Lucina nuciformis*, *Dosinia grayii*, *Tellina lata*, *T. basedowi*, *Myadora corrugata*, *Panopæn orbita*, *Plesias trœa vincenti*, *Loripes simulans*, *Macropneustes decipiens*.

(x) *Volcanic Rocks.* Basalt, dolerite, amygdaloid, lava, ash, etc., which have been derived from several points of eruption, cover limited areas in the south-eastern district in the vicinity of Mount Gambier and Millicent, and smaller areas in the hundred of Menzies, Kangaroo Island. Mount Gambier itself is composed of volcanic ash beds which at one time formed a portion of the walls of a crater. Mount Schank is a perfect crater formed of beds of ash, scoria, etc. Other eruptive centres occur in the neighbourhood of Millicent. The basalt overlies beds of coralline limestone with flints of Tertiary age. The volcanic eruptions most probably took place at the same time as those in Victoria, where the basalt flows overlie Pliocene gold drifts. The Kangaroo Island basalt occurs as cappings in the hundred of Menzies, it rests on a formation similar to that of Yankalilla and Encounter Bay, the age of which has not yet been determined ; its thickness is about 100 feet, and its geological age is most probably the same as that of Mount Gambier.

(xi.) *Post-Tertiary* (*Pleistocene*). Sand, loam, concretionary limestone, clay, gravel, marl, gypsum, salt, shell limestone, sandstone, limestone, conglomerate, gravel, and boulder drift—these constitute the surface formations over a large extent of the plain country and the alluvium of the creek and gullies running through and from the ranges into these plains, and as cappings to all rocks of greater age. Alluvial gold occurs in these deposits in many parts of the State, and has been worked for to a greater or less extent on the various goldfields which have been discovered in the main range from Cape Jervis northward, and on the isolated ranges west of Lake Eyre.

Fossil remains of large extinct mammals (marsupial), birds, reptiles, amphibians, and fishes have been found. These include:—*Marsupials*: Diprotodon, Nototherium, Phascolomys, Sarcoptilus, Palonchestes, Macropus, Thylacoles. *Aves*: Genyorius (Newtoni), Phalacrocorax. *Reptilia*: Crocodilia—Pallimnarchus Polleus, larger than any living species, a freshwater species allied to C. Johnstoni, but larger. Chelonia (tortoise)—Megalania Prisca, a gigantic land lizard. (Localities: Warburton River, Cooper's Creek in vicinity of Lake Eyre.) *Pisces*: Ceratodus Silurard, and other fishes. The localities are as just mentioned.

The chief localities of the mammals are Adelaide, Yankalilla, Millicent, Baldina, Bundey, Mundowdua, Booleroo Springs, Lake Callabonna, Warburton River, and Cooper's Creek.

At Yankalilla and other places the remains of Diprotodon, etc., occur in soft spring deposits. At Lake Callabonna they are partially imbedded in the mud of the lake, in which they appear not to have been disturbed since their original deposition, and in other localities they occur in alluvium, either *in situ* or washed out by floods.

(xii.) *General.* Ice action is evidenced by glacial striæ on rocks of presumably Cambrian age, and on erratic boulders at Hallett's Cove and in the Inman River, and also by the occurrence of erratic boulders in the same district and on Yorke's Peninsula, Kangaroo Island, etc. There is no fossil evidence, but the deposit at Hallett's Cove underlies Miocene limestone, and may provisionally be regarded as of Mesozoic age. Erratic boulders are found strewn on the surface and imbedded in the Lower Cretaceous stratas of the Central artesian basin.

6. **Geology of Western Australia.**[1] —The work of organising a systematic geological survey of Western Australia was commenced in 1896.

During the ten years since then the mining industry has attained such magnitude that attention has been concentrated upon examinations in more or less detail at and around important mining centres. Any general knowledge of its geology as a whole can consequently be gathered only from information gained whilst travelling from centre to centre taken with the observations of previous geologists.

In Western Australia an enormous area is covered by crystalline rocks, and only a limited area discloses the sedimentary series. The most recent formations repose directly upon the oldest; thus in the southern portion of the State, where the prevailing formations are crystalline schists, they are fringed by deposits containing marine shells of existing types.

(*a*) *Physical Features.* The physical features of this State are in no way striking, the coast-line being generally very free from indentation and is generally followed by low flat coastal plains at little elevation above the sea level, which again are followed by low ranges (the previous coast-line), whilst behind the latter are elevated plains broken here and there by low ranges or isolated hills and areas of depression called "lakes." There are no mountains of an altitude known to exceed 3000 feet, whilst those rising from elevated plains do not as a rule present a striking appearance even locally. There are numerous watercourses but no flowing rivers, for these, owing to the gradual and uninterrupted fall of the land towards the coast, only run immediately after heavy rains, leaving only filled pools or waterholes behind.

The so-called lakes of the interior, are, in reality, chains of wind-planed salt flats lying along main valleys, and they are connected one with another, thus forming the drainage channels of this flat country, but as a rule the rainfall is so light in the interior that the water accumulated upon them from the surrounding country simply evaporates, leaving its salt burden behind.

The general character of the land surface presents that of one which has for a long period been subjected to errosion, in the course of which it is highly probable that wave action in a shallow sea has played an important part, since this appears to be the only satisfactory solution of the problem as to how the detrital matter was removed. Portions of this area (particularly the elevated one) have undoubtedly been land surface for a very considerable period, as their laterite cappings conclusively prove.

When we turn to the rocks this impression is further supported by the fact that the most modern stratified rocks as yet known here, after the recent, are of Jurassic age; therefore we may safely conclude that the western portion of this continent has existed either as dry land or a group of islands in a shallow sea since the time at which an elevation took place in mid-Mesozoic times.

(i.) *Geological Formations.* The known geological formations of Western Australia are as follows:—

CRYSTALLINE ...	Igneous origin; Metamorphic origin (Pre-Cambrian?).
PALÆOZOIC ...	Metamorphic origin (Pre-Cambrian?); Cambrian, Devonian, Lower Carboniferous and Permo-Carboniferous.
MESOZOIC ...	Jurassic.
RECENT	Superficial and marine deposits.
VOLCANIC ...	Sheets, flows and necks.

(ii.) *Crystalline Series.* The Crystalline rocks, which consist of granite, gneiss, schist and greenstone, cover an estimated area of 650,000 square miles, or a total of two-thirds of the superficial extent of the State, and may be divided into three groups, the first of which comprises the granites, gneissic granites, and schists of the south-west division; the second, granites, gneissic granites and greenstones of the central and eastern portion of the State; and the third, granites, gneissic granites, schists and greenstones of sedimentary origin of Kimberley and the north-western districts.

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[1] In the absence of A. Gibb Maitland, Esquire, F.G.S., etc., Government Geologist of Western Australia, this article was contributed by Harry P. Woodward, Esquire, F.G.S., Assoc. M.Inst.C.E., Assistant Government Geologist of that State.

(a) *First Group.* The first group is represented by a belt of gneissic granites and acidic schists, with intrusive granite and pegmatite veins, diorite dykes and quartz reefs, which occupy practically the whole of the south-western land division of this State; they occur in a belt that has a course a little west of north, extending from the south coast to the Murchison River, being about 200 miles in width at the south, extending from Point d'Entrecasteaux to Doubtful Island Bay, whilst to the northward as it impinges upon the west coast it narrows down to 125 miles.

Upon the western side of this belt, these rocks form a bold escarpment to the seaward, called the Darling Ranges. This face is evidently a fault line, since rocks belonging to a much more modern period are exposed in places at their base, where the talus covering them has been removed or pierced by wells.

This range forms the edge of an interior tableland, but does not attain any considerable elevation; the highest point, Mount William, is said to be 3000 feet above the sea level.

The question as to whether these rocks are of sedimentary or igneous origin has not yet been determined, but the uniformity of their foliation and apparent bedding, with the occurrence of graphite, would almost favour the former. They have so far proved of economic value only at two points, viz.: Northampton at the north, where lead and copper lodes are found associated with porphyritic diorite dykes, and at Greenbushes at the south, where tin deposits occur in pegmatic and griesen dykes. The diorite dykes which have been intruded into these rocks are generally of an aphanitic character, whilst the quartz reefs are large and often contain marcasite in considerable quantities, but, although generally carrying both gold and silver in small quantities, discoveries of a payable nature have not yet been made.

Upon the South Coast, and also upon the eastern side of the Darling Range, a series of magmatic intrusions of granite are met, which upon the coast form bold bare headlands and islands of rounded and polished dome-like shapes or fantastical ruined forms, and this character is maintained by the island outcrops, which generally follow the lake margins between the Great Southern Railway line and the goldfields.

(b) *Second Group.* To the second group, which occupies the whole area of the eastern goldfields, very considerable interest attaches owing to its economic importance, and, therefore, it has been more closely studied than any other series in this State, but, unfortunately, as yet this close attention has only been paid to main centres of production, whilst with regard to the balance but little is known.

The rocks of this region vary from that first mentioned in the occurrence of what appear to be lenticular magmatic intrusions of basic rocks probably of diabase origin, which have been altered by the action of paramorphism and hydration into amphibolites, hornblende and chloritic schists and epidote rock, whilst portions less altered still retain a massive form consisting of epidiorite or diorite. These magmatic intrusions are contained in a gneissic country of doubtful origin, whilst intrusive granite, often magmatic, has at a more recent period broken through them and is frequently met with at the contact of the gneisses with the greenstones. Except where purely local disturbances have taken place, the planes of foliation lie in a north-westerly direction, or parallel to the long axis of the basic lenses, whilst the quartz reefs or lodes usually follow them, thus presenting a bedded appearance.

Basic dykes can be observed intersecting the gneissic rocks, whilst porphyritic and granite dykes are of common occurrence in the basic zone. It is probable, however, that the basic dykes also traverse the basic rocks, and the acidic the gneisses, but owing to their similarity in a weathered condition at the surface, it is difficult to determine their presence.

(c) Third Group. The third group includes rocks of undoubted sedimentary origin, in which the alteration is due in most cases to regional metamorphism owing to magmatic intrusions of igneous rock not necessarily always visible at the surface. These rocks are largely developed in the Kimberley and north-west districts, where the transition from undoubted sedimentary rocks of Palæozoic age can be traced into crystalline schists.

Although not crystalline, the slates, quartzites, and conglomerates of the same horizon, having undergone metamorphism, must necessarily be included in this group, and since both the crystalline and uncrystalline form the country rock of metalliferous lodes, they are of equal economic interest, and in consequence have received considerable attention.

In the Kimberley district the two main rivers, the Fitzroy and the Ord, take their rise at the same locality, the former flowing in a north-westerly direction and the latter north, forming roughly a horseshoe-shaped valley, which follows the anticlinal axis caused by a granite intrusion, the beds in contact with which have been altered into schist, whilst following and overlying them upon either side, an ascending series of Palæozoic age is exposed.

These rocks are intersected by numerous granite and diorite dykes, whilst a series of large auriferous quartz reefs and copper lodes occur both in the crystalline and uncrystalline portion of this series, following invariably the bedding planes of the rock.

In the north-west there is a greater complex of this series than in any other portion of the State, whilst they are of very considerable economic interest also since they contain a greater variety of metals and minerals than do the rocks of any other district. They have been very greatly disturbed and altered in places by intrusions of granite with pegmatite and diorite dykes, whilst at a more recent period the district has been the scene of very considerable volcanic activity, which has in all probability played an important part in the deposition of certain of the ores.

Under this section, the auriferous belt which includes both Norseman and Kalgoorlie has also been placed provisionally, but there exists very considerable doubt with regard to the soundness of this classification.

(iii.) *Palæozoic Series.* The Palæozoic Series, consisting of slates, shales, quartzites, sandstones, conglomerates, and limestones from which fossils have been determined to be of Cambrian, Devonian, Lower Carboniferous and Permo-Carboniferous age, are most largely developed in the Kimberley district, but in it as yet no rocks newer than the Lower Carboniferous have been identified, although it is quite possible the extensive shale beds may be of the Upper or even Permo-Carboniferous age.

In this series some small lead and copper deposits have been discovered in the Napier Range, but with this exception they have not so far proved to be of any economic value in this district.

(*a*) *Devonian.* In the north-west district the Government Geologist assigns the Nullagine series provisionally to the Devonian period, the beds of which consist of sandstones, grits, and conglomerates, with interbedded volcanic flows or sheets. Of this series interest attaches to the conglomerates, since they have proved to be auriferous in places, being very similar to the banket deposits of South Africa.

To the southward from the north-west coast this series of rocks is supposed to extend in a southerly direction for a considerable distance, probably as far as the Gascoyne River, forming a tableland through which the creeks have cut many cannon-like gorges, at the bottoms of which slates are exposed, whilst from the unconformable junction springs often flow.

(*b*) *Lower Carboniferous.* The Lower Carboniferous rocks are developed in the form of a long coastal belt, commencing a little north of the Ashburton River and extending southward across the Gascoyne and Wooramel Rivers, from which point they are lost until they outcrop again upon the Irwin River. It is, however, highly probable that they are continuous, their outcrops being hidden by superficial deposits.

This series north of the Wooramel consists of limestones, sandstones, shales, and conglomerates, with a general dip to the westward, and it is from them that the large supplies of artesian water have recently been obtained at several points.

(*c*) *Permo-Carboniferous.* The age of Permo-Carboniferous has been assigned by palæontologists to the rocks of three localities, viz., the Irwin River, Bullsbrook, a little north of Perth, and Collie, in the south-west. The rocks at the Irwin and the Collie consist of sandstones, grits, and pebble beds, with shales more or less micaceous and coal seams of a non-caking and poor quality, identical in composition with some of the Mesozoic coals of both Europe and America.

Some recent boring upon the Greenough River, a little to the northward of the Irwin River, has revealed beds of a similar coal. It is therefore possible that these are of greater extent than was supposed, and that they dip beneath the Jurassic beds which lie to the westward.

(iv.) *Jurassic.* The Jurassic Series, which consists of sandstones, light-coloured claystones, grits, and limestones, occurs in the Northampton district, extending south to the Greenough River. In all probability it forms a continuous belt southward from this point, following the coast to Gingin, which is about 40 miles north of Perth, in which locality fossils of a similar age are said to have been obtained, but, since in the intervening country the surface is practically all sand, no definite statement with regard to it can be made at present.

(v.) *Recent.* The recent deposits consist of raised beaches at various points around the southern and western coast and coralline limestones and sandstones, which sometimes contain fossils or casts of shells of existing types, thus proving this section of the coast to be rising.

(vi.) *Volcanic.* Until quite recently the volcanic series was considered to be only represented by a basaltic sheet in East Kimberley and an outcrop of the same rock at Bunbury in the south-west. Later investigations, however, prove that it is of considerable extent and importance.

These rocks evidently belong to two distinct periods, the one consisting principally of andesitic rocks and the more recent of basaltic. They both occur in the form of dykes, necks, sheets, and flows, and are often vesicular, whilst the andesites are sometimes amygdaloidal.

Basalt occurs as extensive flows, forming the Great Antrim Plateau in the East Kimberley district, which extends into the Northern Territory of South Australia, and is also met with at many points in West Kimberley, but this latter has not as yet been geologically mapped.

At Bunbury it occurs in sheet form, assuming the columnar structure upon the beach, whilst southward from this point outcrops are met with in the Lower Blackwood River, and at Black Point upon the coast.

The andesites are gradually proving to be of much more frequent occurrence than was supposed, since the cleaved hornblende andesites were often mistaken for aphanitic amphibolites, into which they sometimes merge so imperceptibly that it is impossible to define a boundary. These rocks are largely developed in the north-west district, between the DeGrey River and the Ashburton River, whilst upon the Murchison goldfields they have been identified at Day Dawn, Cue, and Gabanintha, where they appear to have influenced the concentration of gold in the lodes.

(vii.) *General.* A description of the geology of Western Australia would not be complete if the series of nondescript rocks called *laterites* were omitted, since they form one of the staple surface formations of this State. These rocks are supposed to originate from the gradual weathering *in situ* of schists containing iron, which, whilst in solution, is drawn to the surface by capillary attraction, and there deposited upon the evaporation of the water.

They are usually called ironstone gravel or conglomerates, and are found as cappings to most of the hills upon the goldfields, also covering all the ranges in the south-western district. The rock varies very greatly in both composition and character, the former being directly traceable to the parent rock from which it was derived, and the latter to the conditions under which it was formed. Nodular clay ironstone is by far its most common form, but it also often occurs in a massive state sometimes of considerable richness in iron, whilst at others it passes into a ferruginous sandstone.

No classification of the mineral veins has yet been determined upon, but typical examples exist of fault, dyke, shearing, discission, and shrinkage plane fissures, all of which possess one feature in common, no matter what class of ore is contained, which is that the matrix is quartz.

That the geological knowledge of Western Australia is at present very limited, is a natural consequence of the demand that the official staff shall give first attention to the study of economic problems. A considerable period must elapse before anything approaching a systematic survey can be undertaken.

7. **Geology of Tasmania.**[1]—Tasmania is a geological outlier of Eastern Australia. Its Pre-Cambrian and early Palæozoic history can be delineated only imperfectly. In Mesozoic times some connection existed with the Australian part of Gondwana land. In the early Tertiary it was separated from the adjacent island continent; subsequently the land connection was restored, to be again broken, since when it has remained an island. Dr. A. W. Howitt and Mr. C. Hedley have pointed out that the last land connection was between Wilson's Promontory in Victoria and Cape Portland in Tasmania, *via* Flinders Island and the Kent group, and that an elevation of from 200 to 300 feet would lay dry a tract of country between Victoria and Tasmania.

The rugged nature and the remoteness of the mountain fastnesses of the island have been great impediments to geological research. In spite, however, of the physical difficulties, it has been possible to fix the stratigraphy of a large portion of the State, though the lower Palæozoic strata need further study before they can be satisfactorily determined. As far as examination has proceeded the following systems can be recognised:—

i. PRE-CAMBRIAN.
ii. CAMBRIAN.
iii. ORDOVICIAN.
iv. SILURIAN.
v. DEVONIAN.
vi. PERMO-CARBONIFEROUS.
vii. TRIAS AND TRIAS-JURA.
viii. TERTIARY.
ix. QUATERNARY.

(i.) *Pre-Cambrian.* The diagnosis of the Pre-Cambrian must be accepted as provisional. It is probable that they belong to the Algonkian division of the group. Among them may be mentioned the quartzites and mica schists of the Port Davey districts. These are strongly developed in the south-west of the island as biotite and muscovite schists, greatly contorted, alternating with white saccharoidal quartzites, all striking north-west and dipping south-west. High headlands of quartzites, which have resisted denudation, jut out on the south coast, with bare, snow-white crests visible for many miles. Ores of copper, antimony, and lead occur in these schists. The contorted quartz schists and white quartzite of Rocky Cape, on the north-west coast, are also considered as Pre-Cambrian. These are traversed by granitoid dykes carrying copper ore.

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[1] This article is contributed by W. H. Twelvetrees, Esquire, Government Geologist and Chief Inspector of Mines of the State of Tasmania.

The amphibolite of the Rocky River, enclosing lenses of magnetite with pyrrhotite and copper pyrites, and the zoisite-amphibolite of the Forth River, are also ascribed to the Pre-Cambrian group.

(ii.) *Cambrian.* This system is represented by friable, yellow sandstones, containing casts of Dikelocephalus, Orthis, Bellerophon, etc. These occur at two widely-separated localities on nearly the same meridian, one being on Caroline Creek, between Railton and Latrobe, the other on the flanks of the Tiger Range, in the Florentine Valley. Mr. R. Etheridge reports that the fossils appear to be of Upper Cambrian age.

(iii.) *Ordovician.* The slates and sandstones of the goldfields of Lefroy, Mount Victoria, Mathinna, Mangana, etc., in the northern and eastern parts of the island, are referred to this system, though few fossils of any stratigraphical value have been found. Their bearing is either east or west of north, and anticlinal axes are long and continuous. The gold quartz reefs which traverse them began to form apparently at the close of the Upper Silurian. Large and important mines have been opened on these reefs, and every geological consideration that can be adduced points to the permanency of the goldfields.

The conglomerates and sandstones at Beaconsfield, together with the blue limestones which prevail in that district at Blyth's Creek and Winkleigh, as well as the Chudleigh and Railton limestones, may be provisionally regarded as of Ordovician age. The Blyth's Creek limestone has yielded imperfect casts of corals, and the Railton quarries contain remains of Actinoceras and other cephalopods.

A series of clay slates occurs between Zeehan and Mount Read, known as the Dundas slates, and believed to be of this age. Ill-preserved traces of graptolites have been noticed in them. These slates extend to Mount Read, Mount Black, and the Red Hills, and along their junction with intrusive quartz porphyry rocks (felsite, keratophyre, granophyre, porphyroid, etc.) large lenses of complex gold and silver bearing sulphidic ores of zinc, lead, and copper have been formed.

Another group of rocks perhaps somewhat younger than the auriferous slates is the Gordon River series of limestones, sandstones and slates. The limestone in this group is fossiliferous. The organic remains include *Favosites*, *Orthoceratits*, *Raphistoma*, *Orthis*, *Rhynchonella*, *Euomphalus*, *Murchisonia*, etc. The limestone reappears to the north-east of Mount Farrell in the bed of the Mackintosh River, a short distance above its junction with the Sophia River.

(iv.) *Silurian.* The Silurians are strongly developed at Zeehan on the West Coast, at Middlesex, and Mount Claude, Heazlewood, and the Eldon Valley, Queen River, etc.

At Zeehan, conglomerates and tubicolar sandstone underlie the limestones, slates, and sandstones, which are intersected by the numerous galena-bearing lodes which have the ore for which this field is so well-known.

The fossils found in limestone and quartzite belong to the genera Hausmannia, Asaphus, Illænus, Cromus, Rhynchonella, Strophodonta, Lophospira, Murchisonia, Eunema, Tentaculites, and the beds are considered by Mr. R. Etheridge to be homotaxially equivalent to the lower portion of the Upper Silurian.

Similar tubicolar sandstone occurs near Bell Mount, Middlesex, and on the Five Mile Rise, and casts of Hausmannia (or Phacops), Rhynchonella, Orthis, and coral have been found.

Clay slates in the Eldon Valley containing fossil casts of Calymene, Orthis, Cardiola, are considered to belong to the Upper Silurian.

At the Heazlewood limestone and sandstone have yielded remains of Hausmannia, Cromus, Cornulites, Rhynchonella, Tentaculites, and Favosites.

Sandstones and limestones in the Queen River district have been identified as Silurian (Middle or Upper Silurian). These are west of Queenstown. Brachiopods and trilobites have been found also on the east side of the Lyell Razorback, indicating a similar age for rocks on the Lyell and Lyell Blocks mining properties there. The Queen River sandstones are charged with casts of Spirifera and Orthis.

Trilobite-bearing Silurian rocks also occur north of the Pieman River near the Wilson River.

In the Zeehan field the Silurian slates are largely accompanied by contemporaneous and intrusive sheets and dykes of vesicular melaphyre. The igneous rock corresponds very closely with the German spilite, an amygdaloidal diabase, sometimes called lime diabase.

Massive conglomerates crown most of the West Coast Mountains, the Dial Range on the North-west Coast, Mounts Roland, Claude, etc., lying either flat or in gentle anticlinal folds. These have generally been ascribed to the Devonian, but more recent data point to the close of the Silurian as more probable.

The quartz-porphyries or felsites which form the backbone of the West Coast Range are the geographical axes of Mounts Darwin, Jukes, Huxley, Tyndal, Mount Murchison, and Mount Farrell. They carry copper ore associated with lenses of hematite and magnetite, chloritic and felspathic copper-bearing schists, some of them, probably, schistose porphyries, flank them and are enclosed in them. The felspathic schists of Mount Lyell belong to this group. Sufficient is not known of this geological formation to enable its age to be stated definitely.

Associated with the rocks of the Silurian system in the northern and western parts of the island is an extensive development of serpentine, the altered form of gabbro and its appendages, peridotite and pyroxenite. This rock is found at the Heazlewood, at Trial Harbour, in the Dundas district, in the Forth Valley, and near Beaconsfield.

(v.) *Devonian.* Granite occurs in a meridional line down the East Coast, extending from Flinders Island to Maria Island. It forms Mt. Cameron, Mt. Stronach, the Blue Tier, Freycinet's Peninsula, and is exposed at Ben Lomond, and at the base of Mt. Arthur. Exposures are also seen at the Hampshire Hills, Granite Tor, Middlesex, the Magnet and Meredith Ranges, Heazlewood, etc. The quartz porphyry dykes at Mt. Bischoff, the tourmaline lodes at Mt. Black, and in the Dundas district, the stannite lodes and quartz porphyry dykes at Zeehan, all denote a granitic reservoir below a large portion of the mineral fields on the West Coast. No granite intrusion into Permo-Carboniferous strata has been observed. The normal granite is a dark mica one, but muscovite and lithia micas appear in the tin-bearing varieties. Tin-bearing lodes occur on Ben Lomond and Mt. Heemskirk, while on the Blue Tier floors or stocks of altered granite form huge tin ore bodies of low grade. Porphyry dykes at Mt. Bischoff have shed the vast accumulation of tin ores which has been mined by the Mt. Bischoff Co. for the last 34 years with wonderful success.

(vi.) *Permo-Carboniferous.* The base of the system is formed by glacial conglomerates, grits, micaceous sandstones and flagstones, well seen on Bruni and Maria Islands and elsewhere in Southern Tasmania. Fossiliferous mudstones and limestones form a lower division of the system, while the upper division comprises the Tasmanite shale and coal measures of the Mersey basin, with upper marine mudstones and shales in the Mersey basin and at Hobart, and the coal measure series of Mt. Cygnet and Southport. The characteristic fossil plants of the coal measures of this system are Glossopteris, Gangamopteris, Noggerathiopsis. The seams average from 1½ to 2 feet in thickness, and the analyses show from 36 to 42 per cent. fixed carbon, 41 to 48 per cent. gas, 2 to 9 per cent. ash, and 8 to 12 per cent. moisture. They are known as the lower coal measures of Tasmania.

South of Wynyard and at Barn Bluff, cannel coal or kerosene shale is met with. The Wynyard or Preolenna seam of this coal is in sandstone overlying fossiliferous mudstones, and assays up to 76 per cent. volatile matter. The Barn Bluff cannel coal has only been observed in loose blocks, supposed to have been distributed by glacier action.

At the close of the system, or during Mesozoic times, a local intrusion of alkaline rocks, alkali-and nepheline-syenites, etc., occurred, traversing the Permo-Carboniferous strata south of Hobart, from Oyster cove and Woodbridge on the Channel, to the Huon River in a N.E.-S.W. line. Auriferous quartz and pyrites have been developed near the line of the contact of these igneous rocks with the Permo-Carboniferous sandstones and mudstones, and a good deal of free gold has been shed into the flats.

(vii.) *Mesozoic.* The fresh water beds, which succeed the Upper Palæozoic, belong to the Mesozoic division, but cannot as yet be subdivided with certainty. The nearest approach to a subdivision would be as follows: but the reference to European equivalents is nothing more than an attempt at correlation homotaxially :—

(a) Cretaceous (?) 4. Diabase in intrusive masses, sills and dykes.
(b) Jura (or Rhætic). 3. Upper coal measure sandstones.
(c) Trias (?) 2. Sandstones and shales with coal at Ida Bay.
1. Variegated sandstones with remains of heterocercal fishes and amphibians.

The variegated sandstones occur at Knocklofty, the Domain, Ross, etc. Remains of Acrolepis have been found at Knocklofty and Tinderbox Bay. Bones of an amphibian (labyrinthodontine ?) have been obtained from the Government House quarry in the Domain.

The upper sandstones are readily recognised by their soft felspathic nature: they are generally greenish-grey to yellowish-brown, sometimes white. They are widely distributed throughout Eastern and South-eastern Tasmania, and occur also in the extreme south. They are largely interrupted by intrusions of diabase. They flank the central, eastern and western tiers, and fringe isolated mountains, *e.g.*, Mt. Nicholas, Mt. Victoria, Ben Lomond, Ben Nevis, Mt. Dundas, Cradle Mountain, etc. From Fingal and Mt. Nicholas they extend on the outskirts of the diabase ranges southward to Seymour, Bicheno, Llandaff, Spring Bay, and all over South-eastern and a large part of Southern Tasmania.

These measures enclose the coal seams, averaging from 4 to 12 feet, which are worked at the Mount Nicholas, Cornwall, York Plains, and Sandfly collieries. The analyses of this coal range from 58 to 60 per cent. fixed carbon, 23 to 31 per cent. volatile matter, 9 to 16 per cent. ash, 2 to 4 per cent. moisture, and the coal is not a coking one. A sub-anthracitic coal is raised at York Plains, and at the Sandfly mine a seam of anthracite occurs containing 80 per cent. fixed carbon and 8 per cent. volatile matter.

The fossil flora from these measures must be regarded as characteristic for the Mesozoic. The list includes Thinnfeldia, Pecopteris, Tæniopteris, Sphenopteris. Alethopteris, etc.

The diabasic intrusions cut up the coal measure areas into different basins and cover large portions of the Central, Eastern and Southern districts.

(viii.) *Tertiary.* A great stratigraphic break exists between the Mesozoic and the succeeding strata. This Tertiary system cannot be subdivided as in Europe. The two divisions, Palæogene and Neogene, are adopted in Tasmania. According to this arrangement, the subdivisions are as follows:—

(a) Neogene (= approximately to Pliocene)

Under this head would fall the glacier moraines of the western highlands, and various river terraces and estuarine deposits.

(b) Palæogene (=Eocene to Miocene).

3. Basalt lavas.
2. Fluviatile and lacustrine clays and sands, tin ore drifts, and deep leads.
1. Fossiliferous marine beds at Wynyard (=Eocene).

The marine fossiliferous beds at Wynyard are covered with the basalt which, generally throughout the island, appears to separate the Lower from the Upper Tertiaries. The extensive lacustrine deposits within the watershed of the Tamar cover an area of 600 square miles, and embrace widely-spread pre-basaltic or Palæogene clays and sands, which form a series 900 to 1000 feet thick. Such sediments with fossil leaves of European genera occur at Launceston, Dilston, Windermere, Beaconsfield, Waratah, Strahan, St. Helens, Burnie, and on the Derwent. In the north-east and east, the sub-basaltic gravels are worked on a large scale for tin ore, and yield most of the alluvial tin of the State.

At the close of the Palæogene a great outpouring of basaltic lava took place, and this rock is very general throughout the Island, though rarer on the West Coast.

The rock is usually olivine basalt, but nepheline basalt occurs on the Shannon Tier, and at Sandy Bay, Hobart.

The Neogene valley terraces can only be distinguished from the earlier Tertiaries by position and lithological characters. Some of the gravel drifts of the Derwent, of the Longford plains, and in the neighbourhood of Launceston, belong to this subdivision. The close of the Tertiary, or the beginning of the Quaternary, witnessed a glacier epoch in the west and centre of the island. The highlands round Barn Bluff, Mounts Tyndal, Lyell, Sedgwick, Jukes, Darwin, etc., and the western edge of the great central plateau abound with tarns, ice-scratched stones, and moraines. No proof of glacier conditions in this period in the eastern part of the island has been adduced yet.

Tin and gold ores are the most important products of the deposits of the Tertiary system. They are won from the alluvial gravels and leads of the period. The sands in the Savage River and other tributaries of the Pieman and Huskisson have been worked for osmiridium. Zircon sand, near Table Cape, has also been exploited. Tertiary clays are used largely for brick-making and pottery, the gravels for road-making. Lignites exist, but are not yet industrially important. Though there has been great volcanic activity, there are no signs of Tertiary metalliferous veins.

(ix.) *Quaternary*. These deposits may be classed as follows:—

(*a*) *Recent*.

3. River alluvium and sand dunes.
2. Raised beaches and helicidæ sandstone.

(*b*) *Pleistocene*.

1. River drifts.

The later terrace drifts in the valleys of existing rivers are referred to the Pleistocene. Sand dunes, consolidated to shelly sandstones, occur on Cape Barren, Badger, Kangaroo and other islands in Bass Straits, containing shells of Helix, Succinea, etc. These sandstones sometimes overlie a raised beach. The raised beaches on the North and South Coasts indicate elevation within the Recent period.

(x.) *Ore Deposition*. The period during which the deposition of metalliferous ores was most active was the interval between the Upper Silurian and the Permo-Carboniferous. Ore deposition has been associated principally with the consolidation of the gabbroid and granitic masses. Nickel sulphide and osmiridium owe their origin to the serpentine at the Heazlewood, Trial Harbour, and Dundas. On the other hand the granite magma is responsible for the lodes of silver lead all over the island, whether these pierce quartz porphyry as at the Devon and Mount Tyndal, slate, sandstone and limestone as at Zeehan, or ultra basic dyke rock as at the Magnet. The pyritic lead, zinc, or copper ores of the West Coast Range (Mount Lyell, Mount Read, Mount Black, etc.) are also most probably due to the action of the acid magma. Tin and wolfram ores are naturally referred to the same source, and the gold quartz reefs of the Ordovician strata must be regarded as the result of the expiring effort of the cooling magma to get rid of its surplus available silica. A few veins of barren quartz occur in the Permo-Carboniferous strata, but beyond the exceptional case of the alkali porphyries at Port Cygnet, the chapter of metal-bearing lode action closed, as it began, with the Devonian period. Within that period, therefore, were accumulated the great stores of mineral which the mining industry of Tasmania is now drawing upon. The mines of gold, silver, lead, copper, and tin rank high among the famous mines of the world. Her mineral wealth may, in fact, be considered remarkable, when despite the small area of the island (26,000 square miles) the value of the mineral produced for the year ending 31st December, 1906, amounted to £2,257,147. The industry is thriving, is on a sound and established basis, and with the careful administration and care which it receives it may with confidence be expected to continue a highly important asset of the State for a quite indefinite period of time.

§ 6. The Fauna of Australia.[1]

1. **Zoological Isolation of Australia.**—The most striking character of the Australian Fauna is its distinctness from that of the rest of the world. This character is evinced as much by the peculiarity of the animals found in Australia as by the absence of others which are widely spread over the remainder of the earth's surface. In consequence of this some zoogeographers have divided the earth into two regions, Australian and non-Australian.

The land-fauna of the globe is, as a rule, limited in its migrations by the sea. Other barriers to the spread of species may be now and again overstepped, but the sea imposes restrictions that remain absolute under the existing conditions. Geology, however, teaches us that the sea has once rolled where our highest mountains stand, and that the sites of former lands are now sunk beneath the waves. Here then we find a clue to the presence on all the larger land areas of terrestrial animals. The marine barrier that now separates them is but a passing feature; they were once united and they may yet be so again, and while the union existed there was a free interchange of inhabitants.

The older a group of animals is the farther could it spread, for it has been able to make use of many land connections that have now vanished. Thus, the *Felidæ* and *Suidæ* (cats and pigs) are old enough to have found their way over almost the whole habitable globe, excepting Australia and a few islands to the north. Alone of the great islands of the world, our island-continent has remained separated from the other great land masses since the first appearance of the *Felidæ* and *Suidæ*, and so none have reached it.

Facts of a similar nature, almost numberless, may be brought forward in confirmation of this conclusion. Animals and plants alike bear evidence to its truth, and thus we see how the deficiencies of the Australian fauna are accounted for. The barrier that prevented the incursion of the adaptable and enterprising cats and pigs was equally efficient in the case of a host of other forms, from elephants to earthworms.

2. **Effect of Isolation.**—Before this isolation of Australia, however, some animals had reached our shores, and among them were the marsupials. Once here, they were protected by isolation from competition with the more specialised forms that came into existence elsewhere. They varied among themselves, and gave rise to the diversified forms that now inhabit the country.

There are other groups besides the marsupials whose history runs on similar lines. Of some of them we know this history, but not of all, and the deciphering of the tale of the early origin of the fauna of Australia is one of the many interesting pieces of work that lies before the naturalist.

3. **The Non-marine Fauna.**—The chief interest in Australian fauna centres round the dwellers on land and in fresh water. It is they who shew the peculiarities just noticed, whereas the marine forms are more widely spread, since barriers to their migration are more easily burst through. The fauna of the Pacific Ocean differs in many points from that of the Atlantic, but is linked more or less closely with that of the Indian Ocean, so that it is usual to speak of an Indo-Pacific region. The widespread character

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[1] This article was contributed by T. S. Hall, Esquire, M.A., Lecturer in Biology, Melbourne University.

of the marine fauna as opposed to that of the land will render it advisable, owing to limitations of space, to concentrate our attention on the latter, though we must, in consequence, pass by much that is of interest.

(i.) *Mammalia*. The great group of mammals has been divided into two sections, the *Prototheria* or egg-laying mammals, and the *Theria*, which includes all the rest. The *Theria* are again subdivided into numerous sections, one of which is that of the marsupials. For a long while the marsupials were separated from the rest of the *Theria* on account of certain peculiarities connected with gestation. The young are born in a very undeveloped condition, and usually there is, during development, no organic connection between the fœtal and maternal tissues, or, in other words, no placenta is formed. However, recent research has shewn that a placenta is present in the native cat (*Dasyurus*), and as it is universally present in all *Theria* other than marsupials the criterion fails. *Dasyurus* cannot be separated from the other marsupials, so all must belong to the one group, which is called *Theria*.

The egg-laying mammals are confined to Australia, Papua and Tasmania, and there is no absolutely conclusive evidence of their ever having lived elsewhere. As regards marsupials, they are found nowadays only in Australia and some adjacent islands, and in America as far north as the Southern United States. In former times, as we know from fossils, they ranged still further north and lived even in Europe.

(*a*) *Prototheria or Monotremes*. The egg-laying mammals, in their strange method of reproduction, and in certain points in their structure, shew a decided approach to the reptiles, and they are widely separated in many ways from the higher mammals. They include only the platypus (*Ornithorhynchus anatinus*) and the spiny-anteaters. The platypus is found only in Eastern Australia and Tasmania, and does not range up very far into Queensland. Its curious duck-like bill is so extraordinary that the first skins sent to Europe were viewed with suspicion. The memory of the mermaid, made up of fish and monkey skin, was too recent to be forgotten. Although the adult has no trace of teeth, strong bony teeth are present in the young, and are shed only when the animal is about half-grown. Their place is supplied by horny pads, which are quite efficient for the work they have to do. The platypus makes its nest at the end of a long burrow in a river bank, the entrance being below water-level. The eggs have no hard shell, but are soft like those of the reptile.

The spiny-anteaters are represented on the mainland and in Tasmania by the well-known *Tachyglossus aculeata*, or *Echidna aculeata*, and in Papua by an allied form with a somewhat longer beak. The beak is narrow and rounded, and the long tongue, covered with a viscid secretion, is a very effective instrument for the capture of the ants on which the animal lives. The spines with which the body is covered are colour-banded like those of the true porcupines of the northern hemisphere, but are much shorter. When attacked the animal rolls itself into a ball. It is of great strength, burrows vertically downwards with extreme rapidity, and is an expert rock climber. The two eggs are hatched in a pouch which superficially resembles that of the marsupials. Though possessed of a pouch and "marsupial" bones, the egg-laying mammals are not, in the ordinary sense of the term. allied to the marsupials.

(*b*) *Marsupials*. The group of Marsupials has, in Australia, reached its highest stage of development, and, as the other *Theria* are almost absent, its members have become differentiated in almost every direction to occupy their places. Thus we have the grass-eating kangaroos, the flesh-eating Tasmanian wolf and Tasmanian devil, and the "tiger cat," the insect-eating native cats and "weasels," the ant-eating marsupial mole and banded anteater, the root-eating wombats, the omnivorous bandicoots and leaf-eating koalas. One great group of land *Theria* has no counterpart. There is no marsupial bat.

Marsupials have been divided into two main groups which, roughly speaking, though not exactly, correspond to carnivorous and vegetarian. This usual, but somewhat unsatisfactory, classification is founded on the teeth. An examination of the lower jaw of a wombat, kangaroo, "possum," or a few other forms, will shew that there are two strong teeth in front, the incisors. Usually only two are present. This gives the name to the group, *Diprotodontia*, that is, "two teeth in front." Most of its members are vegetable feeders. The other group comprises forms with several lower incisors—the *Polyprotodontia*, "many front teeth." These are almost entirely flesh-eaters. A more modern classification, and apparently a better one, is based on the structure of the foot. In the kangaroo, what appears to be a single toe on the inner side of the hind foot bears two claws. In reality there are two toes present which are bound together by skin. This feature is known as "syndactyly," and gives its name to the group, *Syndactyla*. The other group comprises the remaining marsupials, and is known as *Diadactyla*.

(ii.) *Diadactylous Marsupials*. Confining our attention to the Australian marsupials, we find the *Diadactyla*, which have the second and third toes separate, are represented only by a single family, the *Dasyuridæ*, or native cat family. This family is apparently less changed from the original marsupial stock than is any other Australian one. The "native cats" (*Dasyurus*), the several kinds of which vary in size from that of a pug-dog to that of a ferret, are nearly all spotted with white, the body colour being brown or black. They are found all over Australia, from Tasmania to New Guinea. A number of small species exist. ranging in size from a half-grown kitten to that of a mouse, and belonging to two other genera (*Phascologale* and *Sminthopsis*). Popularly they are called weasels and mice. Some of them are terrestrial, others arboreal. There is a peculiar jerboa-like little species (*Antechinomys laniger*), which is found throughout the drier interior. The banded anteater (*Myrmecobius*), about the size of a rat, has a similar range, but seems commoner on the western side of the continent. The Tasmanian Devil (*Diabolus ursinus*, or *Sarcophilus ursinus*), now confined to Tasmania, is a clumsy, hideous, black and white blotched animal, about as large as a pug-dog. Its ferocity and strength justified its name.

The last member of this family is the Tasmanian wolf or tiger (*Thylacynus cynocephalus*). It is about the size of a retriever, but with a much longer body. The cross-banded back gives it the name of tiger, which is the one generally used. It is a fierce, predatory animal, but is rapidly becoming exterminated. Like the Tasmanian Devil, it formerly lived on the mainland, and its fossil remains have been found as far north as the Darling Downs. All authorities are not agreed that the "tiger" should be included in the same family as the animals previously mentioned. Some place it in a family by itself; others group with it certain South American extinct animals known as Sparassodonts; others again hold that the latter forms are not marsupials at all, but a sort of connecting link between them and an ancient group, the *Creodonta*, which gave rise to the modern *Carnivora*, and to the *Marsupialia* as well.

(iii.) *Syndactylous Marsupials*. Taking now the remaining Australian marsupials, we find that they all have the second and third toes bound together; they are *Syndactyla*. Two families are polyprotodont, namely the *Peramelidæ* and the *Notoryctidæ*; the others are diprotodont.

The *Peramelidæ*, or bandicoot family, comprises several animals mostly about the size of a large rat. They are ground-dwellers, and range over all Australia. The marsupial-mole (*Notoryctes*) forms a family by itself. It is about the size of a newly-born kitten, golden yellow in colour, quite blind, its eyes being very rudimentary and covered by the muscles of the face. On hard ground it is a clumsy, sprawling walker, but in sandy soil a remarkably rapid burrower, its great, shovel-shaped claws enabling it to sink out of sight almost at once. It has a remarkably restricted area of distribution, being confined, as far as is known, to the basin of the Finke River in Central Australia, though there is the probability that it is to be found in Western Australia.

The remaining families are diprotodont. The *Phalangeridæ* include the Australian "possums" *(Trichosurus)*, which have wrongly appropriated the name of the true or American opossums. The value of the skins of these animals for furriers' purposes leads to their slaughter by millions annually, and they have now disappeared where they were once common. Some allied forms *(Petaurus*, *Dromicia* and *Acrobates*) have a fold of skin stretching from the hind to the fore-limb, which enables them to glide from a greater to a lesser height. Collectively, they are spoken of as flying-squirrels, though they cannot fly and are not squirrels. The Koala, Kola, or native bear or monkey-bear (*Phascolarctos)*, a lethargic leaf-eater, belongs to this family.

The *Phascolomyidæ*, or wombat family, contains only one living genus (*Phascolomys*). which is confined to the south-east and Tasmania. The wombats are inoffensive burrowers. but unfortunately are apt to damage crops where they are common, and their great strength and burrowing powers make fences but poor protection against their inroads.

The kangaroo family *(Macropodidæ)* is a large one, and its members vary in size from the giant, standing higher than a man, to the Musk kangaroo of the Herbert River, which is about ten inches long. The larger forms were dwellers on the open plains, where, with scarcely any foes, they grazed in countless thousands. Now, like the bison of America, they are passing away. The smaller kangaroos which belong to various genera, and are spoken of as wallabies, frequent the scrubs and rocky fastnesses of the mountains. The tree kangaroos of Queensland and New Guinea (*Dendrolagus*) browse on the leaves of lofty eucalypts, which they climb to their topmost branchlets.

Among extinct marsupials we have *Diprotodon*, as large as a rhinoceros, but as inoffensive apparently as a wombat, which it seems to have resembled much in appearance. *Thylacoleo*, a huge carnivorous monster, greater than a polar bear, was allied to the phalangers. There were also giant kangaroos, standing a dozen feet high, and wombats as large as an ox. On the other hand there was a dwarf wombat, about a quarter of the size of our recent species. The oldest known Australian marsupial, *Wynyardia*, is of Oligocene or perhaps Eocene age.

(*c*) *The Higher Theria*. In the *Theria* above the marsupials we are poorly off. The Dingo (*Canis dingo*) reached Australia while the giant mammals were still living, and his bones occur as undoubted fossils, a fact proved some forty years ago, but still not accepted by many foreign naturalists. There are several kinds of true rats (*Mus*) and a widely spread water-rat (*Hydromys chrysogaster*), as well as a few other kinds. Bats are common, for both they and rats have found their way all over the globe, excepting to a few remote islands, and this without the aid of man, and in fact before his appearance on the scene. The largest bats we have belong to the genus *Pteropus*, and are fruit-eaters, being a great scourge to orchards in the warmer parts. They are generally spoken of as flying foxes. Another large bat a white one (*Megaderma gigas*), is found in caves far inland.

Seals, whales, and the dugong being marine forms, must be passed over.

(iv.) *Aves*. Birds shew the same characteristics that the mammals do. Deficiencies, as well as the presence of peculiarly Australian forms, serve to distinguish Australia from the rest of the world. Among the groups which are eminently characteristic are the birds of paradise, which have their home in New Guinea and just pass into Northern Queensland. Of pigeons, we have more species than the rest of the world, and we have the largest and the smallest kinds. The cassowary and the emu, forming a single family. are unknown beyond our region. The cassowary (*Casuarius*) is found in the forests of New Guinea and North Queensland, and the emu (*Dromæus*) ranges over all Australia, and, till it was exterminated, was common on Kangaroo Island, the islands of Bass Straits, and Tasmania. The brush-tongued lories (*Trichoglossidæ*) follow the flowering of the honey-yielding eucalypts throughout Australia. The honey-eaters (*Meliphagidæ*) are among our most characteristic birds, though they pass far beyond Australia itself, and out across the Pacific, even to the Sandwich Islands. The larger ones are sought for food, while some of the smaller kinds, which have developed a taste for orchard fruits. are at times a scourge. The peculiar mound-nests of the *Megapodidæ*, where the eggs are hatched after the manner of those of reptiles, are very characteristic of Australia, though not confined to it. Among other strange forms are the bower birds (*Ptilonorhynchidæ*), whose habit of building playing-runs and decorating them with bones, shells, flowers, and so on, has often been described. The lyre birds (*Menuridæ*) are remarkable for their peculiar tail feathers. They are inhabitants of dense fern-gullies in Eastern Australia. Their allies, the scrub birds (*Atrichidæ*) are confined to the dense forests of the warm east coast, and of West Australia. The most striking absentees, whose abundance in Eastern Asia makes their absence here so remarkable, are the pheasants and vultures, while there are other abundant East Asiatic forms which are poorly represented amongst us.

(v.) *Reptilia.* Among reptiles we have the estuary crocodile (*Crocodilus porosus*), occurring commonly in the northern rivers, and ranging from India to the Solomons, and even it is said, as a stray, to Fiji. A small, harmless species (*Crocodilus johnstoni*) is found in the fresh waters of the north. Of freshwater tortoises there are three genera represented (*Chelodina, Emydura* and *Elseya*). None occur in Tasmania. These tortoises tuck their heads into their carapaces by an S-shaped fold in a horizontal plane, and belong to a group whose other representatives are found in South America.

Among lizards the most peculiar are the so-called legless lizards, which are confined to Australia. In them the front limbs are completely absent, and the hind limbs are represented only by a pair of short flaps which fit into grooves at the side of the body, and so easily escape detection. The family (*Pygopodidæ*) contains seven genera, *Pygopus*, *Delma*, and *Lialis* being the most widely spread. The skinks (*Scincidæ*) are the most numerous Australian family, and the *Varanidæ*, commonly called "goannas," contain the largest of our lizards. Altogether we have about 390 species of lizards.

There are slightly more than 100 species of Australian snakes, about three-quarters of them being venomous. The number of non-poisonous forms decreases as the latitude rises, so that in Tasmania none are found, all the snakes being venomous. The harmless kinds include the blind snakes (*Typhlopidæ*), which have very smooth, glassy skins, and are burrowing forms, living principally on termites, and therefore deserving of careful protection. The pythons and rock snakes are the largest of our Ophidia, but are also harmless. *Python spilotes*, the diamond and carpet snake of the mainland, is beautifully mottled. It grows to a length of about 10 feet, and is found throughout Australia. The long, slender, green tree-snake (*Dendrophis punctulatus*) inhabits almost the whole of Australia. It is quite harmless and feeds on tree frogs, young birds, and lizards. Though so many of our snakes are poisonous, only five common forms are really deadly. These are the brown snake (*Diemenia textilis*, or *Demansia textilis*), the black snake (*Pseudechys porphyriacus*), the copperhead—unfortunately called diamond snake in Tasmania—(*Denisonia superba*), the tiger snake (*Notechis scutatus*), known in Tasmania as the carpet snake, and lastly the death adder (*Acanthophis antarctica*). The four first all occur in Tasmania, and are the only snakes found there. The tiger snake is the boldest of all, and commonly shews fight. The death adder, a short, thick-bodied snake, is very lethargic, and often allows itself to be trodden on, when it strikes with lightning-like rapidity and deadly effect. None of our snakes have long enough teeth to make their bite, when made through clothing—even a single thickness of tweed—a cause of dread.

(vi.) *Amphibia.* In amphibia the most striking fact is the absence of tailed forms (*Urodela*). The characteristic old world genus *Rana* just invades North Queensland. We are especially rich in tree frogs (*Hylidæ*), some of which as *Hyla aurea*, the common southern green frog, have lost their tree-climbing habits and the adhesive suckers on fingers and toes. The *Cystignathidæ*, which include the common sand frog of the south-east, occur also in South America. The water-holding frog, with its body enormously distended by water, can live for a year or more in thoroughly dried mud. It is found in Central Australia.

(vii.) *Pisces.* Owing to our poor river development, Australia is not rich in freshwater fish. The great river basin of the Murray has several species peculiar to itself, as the Murray cod (*Oligorus macquariensis*), the golden perch (*Plectroplites ambiguus*), the silver perch *(Therapon ellipticus)*, and the catfish *(Copidoglanis tandanus)*. Of these, the Murray cod, owing to stream capture and the consequent alteration of drainage areas, has invaded the head waters of a few other rivers, as the Richmond and Clarence Rivers in New South Wales. Another curious instance of distribution is that of the blackfish of the south-east *(Gadopsis marmoratus)*. This is almost confined to rivers entering Bass Straits, it being found in Northern Tasmania and Southern Victoria. These streams are the now separated upper-waters of a river which drained the plain now occupied by Bass Strait, and entered the ocean to the north of King Island. River capture has carried blackfish into the upper waters of the Goulburn and the Loddon. Eels, which are common in all streams from Cape York to Beachport, are absent from the entire Murray basin and Central and Western Australia, and apparently from Northern Australia as well. The southern trouts *(Galaxias)* are found in the streams of south-eastern Australia and Tasmania. Elsewhere they are found in South Africa, New Zealand, Patagonia and Chile. As some of the species, but not all, breed in the sea, the distribution of the genus is not as remarkable as once was thought. The gudgeons or bullheads (*Gobiidæ*) have representatives in fresh water all over Australia. None of these grow to any size.

The most remarkable of all our fresh-water fish, however, is the Lung fish *(Neoceratodus forsteri)* of the Mary and Burnet Rivers of Queensland. It is one of the three surviving species of an ancient and once world-wide group of fish. As its name implies it has a lung, a modified swim-bladder, in addition to the usual gills. When the water is foul it comes to the surface to breathe. It cannot, as its African relatives do, live in the mud of dried up ponds.

(viii.) *Invertebrate Fauna.* In land and freshwater shell fish we are not well off. The eastern coastal strip from Cape York well into New South Wales is closely related to Papua in its shell fish, as it is also in so many other ways. There are many genera of the Helices. Of the rest of Australia the western State seems the poorest in molluscs, though many of its inhabitants range right across to the eastern highlands.

Among insects, the butterflies of the warm damp Queensland coastal districts vie in beauty with those of any part of the world. As we retire from this region their number and size decrease. The wandering butterfly, a black and white species, at times appears in countless myriads and travels far out to sea. We are especially rich in beetles of the families *Buprestidae*, *Curculionidæ*, and *Cerambycidæ*, the members of the first family containing some very handsome insects. White ants are plentiful, especially in the tropics. One species is remarkable for its narrow wall-like nests, which have their long axes along the north and south line.

Among crustacea a species of *Apus* is found in the interior, and the allied *Lepidurus* in the southern coastal districts. The peculiar isopod, *Phreatoicus*, and some allied genera, are found in our mountain streams or burrowing in the damp southern gullies. Among the higher crustacea belonging to the *Parastacidæ* are the genera *Astacopsis (Chærops)*. which is spread all over the continent, and *Engaeus*, found only in Tasmania and Southern Victoria. The larger species of *Astacopsis* are used as food.

Among the flat-worms, *Linstowia* is peculiar, as it is confined to the monotremes and marsupials of Australia and South America. The genus then must date back to Mesozoic times. *Temnocephala* infests the fresh-water crayfish, and is curious on account of its distribution, as it ranges up into America, and, strange to say, an allied form has recently been recorded from Southern Europe.

Australia is rich in earthworms, but the native species are being ousted by European forms. *Megascolides* is remarkable for the size of one of its species, the giant earth worm of Gippsland (*M. australis*), which reaches a length of over seven feet, and is as thick as a man's finger. The *Acanthodrilidæ* are distinctly a southern family, being especially plentiful in Australia, New Zealand and South America, and gradually becoming fewer in species as we pass north from these lands.

To attempt to deal with the fresh-water protozoa would make too great demands on space, and for the same reason the whole of the marine fauna must here be passed over in silence.

4. Origin of the Fauna.—The place of origin of our Fauna and its route of entry into Australia has been much discussed. As mentioned previously, it consists of several constituents. The marsupials, and probably some of the birds, the tortoises, the cystignathid frogs, some fresh-water fish (as the Galaxiidæ and some others), many insects and earthworms, have their nearest living allies in South America. These represent ancient groups, and probably date back to the times when a great southern continent existed, of which the southern lands are but isolated fragments.

Much of the remaining Fauna has a northern origin, as the dingo, rats, bats, most of our flying birds, lizards, fresh-water crayfish, and probably the bulk of our insects. The evidence of a Malayan incursion, both of plants and animals, is specially strong along the damp seaward slopes of the eastern coast range of Australia.

The native Australian Fauna is in danger of disappearing before the inroads of introduced animals like the rabbit, the sparrow, and the starling. The beginning of an attempt to stay this onset may be seen in the reservation in some of the States of asylums for the native animals. The Victorian reserve includes nearly all Wilson's Promontory, the southernmost part of Australia; New South Wales has reserved a coastal strip near the Hawkesbury mouth; but enlightened action is badly needed.

§ 7. The Flora of Australia.

1. Typical Character of the Australian Flora.—(i.) *Effect of Climate and Altitude.* As would naturally be expected in a territory whose limits extend from the high tropical latitudes of North Queensland to the lower temperate regions of Victoria and Tasmania, and whose physical elevation varies from the sea coast (or levels even below that of the sea) to peaks whose tops are covered during a great part of the year with snow, the vegetation of Australia is largely varied. In the Queensland tropics there are many forms which belong to the Malayan and Oceanic regions. In the north of Western Australia, the tropical area, comprising some 364,000 square miles, is lacking in these forms. The assertion of land contiguity between Northern Queensland and New Guinea and the Malayan Archipelago generally, frequently made by geologists and zoologists, is thus supported by botanical evidence. The existence of many types characteristic of Australia and South Africa points to the possibility of a land connection between those continents by way of what is now the Indian Ocean. But, whatever evidences of land connection may be discovered, the fact remains that the great bulk of the vegetation of the temperate zone, where the flora is profuse and various, is distinctively Australian. Hence Australia has been isolated for a long time, but probably not so long as New Zealand.

(ii.) *Soils and Geological Formations.* While climate is generally the principal factor deciding the main features of a district's sylvan landscape, the soil and sub-soil exercise important influence in determining the facies of the verdure-clad earth. A notable example of this is seen in the differences between the vegetation of Perth and that of the Darling Range. With general climatic conditions fairly constant, a similar rainfall and an equivalent altitude, it is notable that in the one case the soil consists almost entirely of sand or sandy swamps, while in the other the soil on and near the hills is derived from igneous rocks, and is richer and more retentive of moisture.

(iii.) *Special Plant Adaptations.* Remarkable modifications have been effected in the vegetation that exists in many of the deserts of the interior, enabling the flora to withstand the inhospitable conditions of a hot, arid climate. The general dryness of the climate of Australia has led to marked adaptations in form and structure. Spiny plants, with foliage of hard, woody ribs and reduced surface area, are characteristic. Exhalation into the air of the moisture absorbed from the soil by the roots, is thus reduced through the absence of soft cellular parts. The moisture absorbed by the root-system, scant because of the desert soil, is eagerly taken up by the arid atmosphere. In these, the relative amount of transpiring foliage is small, and appears to correspond to the soil conditions. Short, scale-like leaves, for example, mark considerable reduction in the foliage area. In the great majority of acacias, the true leaves are suppressed, the leaf stalks, however, remaining in a flat leaf-like form (*phyllodia*), or the leaf may be entirely suppressed, the leaf-functions being carried on by the stems of the plants. In some desert plants, as *Verbenaceæ* and *Solanaceæ*, a dense coat of hairs covers the leaves or whole plant; in others, as in some acacias, the surface of leaves and twigs is substantially a layer of resin, both modifications greatly reducing the transpiration, and serving also as a protection against the extremes of heat and cold to which they are subjected. Generally the vegetation on the west coast is more drought-resisting (*xerophilous*) than that on the east coast.

(iv.) *The Australian an Ancient Vegetation.* Of particular interest from a scientific point of view, is the fact that the Australian flora is of a primitive type. Forms belonging to early stages in plant evolution exist upon this continent, which otherwise can only be studied as fossils in rocks of long-past geological ages. This is seen particularly in *Byblis*, *Casuarina*, *Cephalotus*, *Nuytsia*, *Polypompholyx*, and *Phylloglossum*.

(v.) *General Features of the Australian Landscape.* The coastal regions furnish the most luxuriant vegetation. A marked physical feature of the continent is the chain of mountain ranges which runs along part of the southern and the eastern coast, roughly parallel to the contour, and at little distance from the shore. Upon these heights, and on the uplands and foot-hills which stretch from them to the coast, is to be found the heaviest forest. There is, however, in Western Australia, also a great forest belt, some 350 miles in length, and from 50 to 100 miles in breadth, not on the coastal side but extending eastward from the Darling Ranges. Inland, from what may be called the coastal forest region, the vegetation becomes thinner as the more arid regions replace those of heavier rainfall, and rapidly dwindles, till bushes, scrubs, and dwarf eucalypts, with belts of pine at intervals, give place to a scant and inferior vegetation. Except in its south-west portion, Western Australia has little forest. South Australia has still less. But the great Australian mountain system runs from the Grampians of Western Victoria easterly, following generally the trend of the coast-line, north-easterly into New South Wales, and northerly through that State and Queensland to Cape York, with a spur which turns westward and forms the watershed between the streams which flow north into the Gulf of Carpentaria and those which eventually reach the Murray. Here there are large trees and dense undergrowth, very often giving place to rich pasture lands on the extensive plateaux and great plains that stretch away into the interior. Under the copious rainfall of the coastal regions the wild flowers that belong to Australia, variegated, bright, often scentless, grow luxuriously.

(vi.) *Forestry, Agriculture, and Horticulture.* Both hardwoods and softwoods abound in the forests, their commercial uses being set out in the chapter on Forestry. Among the exotics that have been acclimatised are many that yield valuable timber. Cereals are grown in large quantities, but none are indigenous. Native plants fit for human consumption are insignificant. Generally the indigenous plants that can be utilised for food need some preparation before being used. The part suitable for food is the yam-like root of some, the stems, foliage, or seeds of others. Useful fruits are found, but most of them require to be cooked, being very acid in their native state. In tropical Queensland there are pleasant fruits of the lime family. Edible species of fungi are also common, but none are marketed or much used, except the common mushroom. The aboriginals eat the fruits of the doobah (*Marsdenia Leichhardtiana*), the seeds of acacias, the grains of some indigenous grasses and of the nardoo (*Marsilia quadrifolia*), as well as other vegetable products having a more or less meagre store of nutriment. Many of the native grasses and other herbage have high nutritive properties, affording rich fodder, but there is not a native fodder clover; on the contrary, many native Leguminosæ are poisonous. The cultivation of native wildflowers, and the sporting of selected garden stocks, has led to the introduction of many new varieties, and horticulture is a growing industry.

2. **Botanic Distribution.**—(i.) *Tropical and Extra-tropical Regions.* The vegetation of Australia may be roughly classed as tropical and extra-tropical. The line of

geographical distribution between the two classes is not distinctly marked, but it may be said that the former class covers the north-eastern uplands, where the Malayan and Oceanic forms have, by their incursion enriched the east coast from Torres Strait as far south as Illawarra, and also the tropical regions of Western Australia, where the different climatic conditions and the absence of high mountains and the permanent streams and still waters usually associated with them do not cause the vegetation of these tropical latitudes to be specially distinguished. Extra-tropical plants, mostly hardwoods, characterise the Australian forests of temperate regions.

(*a*) *The North-east Tropical Vegetation.* While something under a tenth of Queensland bears timber of commercial value, at least a third of that State may be said to be covered with trees which have a local use for building and other purposes. The vegetation is rich, the number and variety of plants being very large. There are a large number of fibrous plants of the orders *Malvaceæ*, *Sterculiaceæ*, *Leguminosæ*, *Urticaceæ*, *Scitamineæ*, *Amaryllideæ*, and *Aroideæ*. Of indigenous fruits the principal are the lime and Davidson's plum, with others of the order *Euphorbiaceæ*, *Ampelideæ*, *Rutaceæ*, and *Urticaceæ*. There are numerous fungi—many of them edible. Among trees, acacias, araucarias, xanthorrhœas, *eucalypts*, canariums and callitris are the most abundant. Besides these there are medicinal, oil, perfumery, rubber, and spice plants, as well as some which give tanning and dyeing material. Trees of many varieties, of unique beauty in the landscape, and yielding handsome timber for carpentry, cover the forests. Overlapping of the tropical and extra-tropical vegetation is inevitable, and the merging of the former into the latter, becomes more and more marked after the New South Wales border is crossed. The vegetation of the north-east may be summarised by saying that between the Dividing Range and the Pacific, there are some of the finest belts of forest in the continent. Among eucalypts are several varieties of ironbark (*Eucalyptus paniculata*, *E. crebra*, *E. siderophloia*, *E. sideroxylon*) tallow-wood (*E. microcorys*), blackbutt (*E. pilularis*), grey gum (*E. propinqua*), spotted gum (*E. maculata*), turpentine (*Syncarpia laurifolia*), forest red gum (*E. tereticornis*), and red mahogany (*E. resinifera*); among conifers, the Moreton Bay (*Araucaria Cunninghami*), brown (*Podocarpus elata*), and Bunya-Bunya (*Araucaria Bidwillii*) pines; while among the brush timbers of fine grain are red cedar (*Cedrela australis*), rosewood (*Dysoxylon Muelleri*), red bean (*Dysoxylon Muelleri*), black bean (*Castanospermum australe*), white beech (*Gmelina Leichhardtii*), silky oak (*Grevillea robusta* and *Orites excelsa*), and tulipwood (*Harpulia pendula*). In Queensland, a large portion of the country west of the Divide is an extensive plateau running into great plains, but with little timber. Towards the centre of the continent, where the land gradually falls to a vast shallow basin, with low hilly ridges at intervals on its rim, and wide expanses of plain country with short water courses losing themselves in the desert, the tree growth is very scanty, consisting chiefly of stunted eucalypts, such as the gimlet-gum, (*E. salubris*), and black box (*E. microtheca*), the desert sheoak, acacias and mallee. Westward of the ranges in New South Wales, where the table-land sinks down to undulating country and vast plains, through which the tributaries of the Murray make their way, the vegetation changes to scrub and open forest, consisting of eucalypts such as red gum (*E. rostrata*) along the water-courses, with several varieties of box, cypress and other pines, and wattles. Farther inland again the timber becomes more sparse, being chiefly cypress pine, stunted eucalypts, and casuarinas, with extensive areas of mallee scrub.

(*b*) *The North-west Tropical Vegetation.* In the northern district of Western Australia, there are extensive tracts of pasture lands on the slopes drained by the rivers flowing into the Indian Ocean. Inland from these, are stunted bush and scrub lands, which in some cases impinge even upon the sea border. The Kimberley district has forest country about the Fitzroy River, and the King Leopold Ranges are tree-clad. Farther eastward, and continuing across the border into the Northern Territory, grasses and stunted growths form the main vegetation. The flatness of the country accounts for the absence of mountain flora, the vertical elevation rarely reaching 1500 feet. The chief geological features are sandstone of the carboniferous era forming the tableland, and basaltic plains. As a consequence, the flora is very little varied, the largest order of plants being *Leguminosæ*, represented by acacias and cassias. The smaller plants include *Indigofera*, *Crotalaria*, *Daviesia*, and *Bossia*. Next to *Leguminosæ*, *Gramineæ*, of which there are several new types, are the most numerous. With the exception of the grasses, all the monocotyledons are limited. The *Myrtaceæ* include eucalypts (principally *E. rostrata*) and melaleucas. The *Loranthaceæ*, *Rubiaceæ*, *Cucurbitaceæ* and *Proteaceæ* are represented by several plants. *Compositæ*, *Chenopodiaceæ*, *Santalaceæ* and *Orchideæ*, are rare, but members of the family *Lythraceæ* are more numerous than might have been expected. The Gymnosperms are sparingly represented, *Euphorbiaceæ* are surprisingly scarce. Perhaps the most marked characteristic of the whole tract is the almost entire absence of lichens and mosses, though ferns are plentiful in the vicinity of the Victoria River.

(*c*) *The Australian Extra-tropical Vegetation.* Australia is believed to have been free from geological upheavals and cataclysms for a longer period than most other lands. The persistence of type that has resulted has enabled its flora to become very well adapted to prevailing climatic conditions. The chief feature of the Australian forest landscape, as presented by the eastern, south-eastern, and south-western portions of the continent, is the presence of giant hardwoods, mostly eucalypts—very often rapidly reproductive, and attaining to a great age. The existing types are of high antiquity, and are possessed of special means of resistance to the extremes of temperature, to excessive sunshine, and to alternations of drought and flood to which they are subject. Along the shores of the Great Australian Bight, and in the north and north-west, there are no extensive forests. In the desert interior the vegetation is generally dwarfed and stunted, the forests of the inland slopes of the eastern mountains gradually thinning from the thickly-clad hilltops to second-class eucalypts, whilst these latter in turn give place to extensive areas of mallee scrub, the vegetation becoming more scarce, until in the arid interior, patches are found with no covering of herbage of any kind. The hill slopes, however, are often clad with rich grass, and along the water-courses eucalypts such as red gum persist, with pines and acacias. In the south-west, where the ranges approach closely to the ocean, the forest bed extends beyond the watershed some distance inland. The great belt of jarrah (*E. marginata*) which stretches eastward from the Darling Hills, has two distinct but narrow belts of tuart (*E. gomphocephala*) and red gum (*E. calophylla*) between it and the coast. Within this extensive tract of jarrah, in the extreme south-western part of the State, is the main karri (*E. diversicolor*) belt, stretching from Cape Hamelin to Torbay. In this region the jarrah, karri, tuart and red gum are the dominant trees. In the somewhat drier districts stretching eastward of the jarrah belt, there is a fairly wide strip of white gum (*E. redunca*) enclosing a narrow belt of York gum (*E. loxophleba*) which, as regards its northern and southern limits, is almost coterminous with the jarrah. Eastward of this again the arid region is entered, and the forest rapidly dwindles, changing first to a poorer growth of white gum until, in the sandy wastes of the goldfields region, the vegetation is scant and stunted, consisting chiefly of the eucalypts, locally known as salmon, morrell, (*E. macrocarpa*) and gimlet (*E. salubris*) gums, with some belts of pines at intervals. The Tasmanian flora represents that of South-east Australia, but there are also some valuable conifers, chiefly in the western and southern parts, such as the Huon (*Dacrydium Franklini*), King William, and celery-top (*Phyllocladus rhomboidalis*) pines. The forest area of the island is extensive, covering two-thirds of its surface. The principal eucalypts are blue-gum (*E. globulus*), stringy-bark (*E. obliqua*), peppermint (*E. amygdalina*,—the mountain ash of Victoria), and silver-top ironbark (*E. Sieberiana*); the chief fine-grain woods are blackwood (*Acacia melanoxylon*), beech or myrtle (*Fagus Cunninghami*), sassafras (*Atherosperma moschata*), native cherry (*Exocarpus cuprcssiformis*) native box (*Bursaria spinosa*), and casuarina or sheoak. These are distributed throughout the State.

The extra-tropical vegetation of Australia is highly differentiated from that of the rest of the world. In the eastern States, however, there is some admixture in the flora of species derived in the course of past ages from almost all other regions of the globe, but South and Western Australia are, as regards their flora, typically and purely Australian. The natural orders which are endemic, or nearly so, to Australia are either entirely confined to the continent or are represented elsewhere only by one or a few outlying species, mostly in adjoining regions. They are the *Tremandreæ*, *Stackhousiaceæ*, *Stylideæ*, *Goodeniaceæ*, *Casuarineæ*, *Philhydreæ*.

Like Australia, New Zealand has its own characteristic flora: 72 per cent. of its species are endemic, 21 per cent. are found also in Australia, and 7 per cent. are sub-antarctic. The forests are often mixed in their growths, with pines of various kinds generally predominating, the finest tree being the kauri pine (*Agathis australis*). Tawa (*Beilschmiedia tawa*) and totara (*Podocarpus totara*) also flourish. In the Middle Island several species of beech (*Nothofagus*) are found, particularly on the higher levels. In the forest areas there is dense undergrowth. In the meadows the tussock form is characteristic of various grasses and sedges. The shrub-form and the iris-like form also help to make up the facies. The scrub is made up to a large extent of manuka, which seems to be the same as our *Leptospermum scoparium*. *Bursaria spinosa* is common here as in the rest of Australia, this shrub being universal throughout Australia and New Zealand. Pittosporum is native to New Zealand.

(*d*) *Alpine Vegetation*. The Australian continent is not remarkably irregular in physical elevation, the highest elevation being only 7000 feet above sea level, while a great deal of the land surface stretches for many miles in extensive plains, offering no kind of relief to the eye. In these circumstances little characteristic alpine flora is to be expected. There is none in Western Australia, the vegetation on heights and plains having the same physiognomy. In Eastern and South-eastern Australia and New Zealand only the highest points of the mountains bear alpine flora. The transition from the forest to the alpine region is gradual, considerable overlapping of alpine and lowland flora being noticeable, and differentiation of alpine types is less marked than usual. Numerous bushes grow on these transition areas. Endemic conifers are wanting in the Australian Alps; but on many mountains which attain a height of 5000 feet, the flowering plants display rich and varied colours.

(ii.) *Exotics*. While Australia has made large and flourishing additions to the forest flora of many countries, a large number of exotics have been successfully introduced here, furnishing a welcome variation to the sombre landscape presented by the prevailing eucalypts. With practically no cereals of value as food for man and with few fodder plants, and these generally of an inferior kind, the fruits of the earth which Australia offered were indeed small. Now, however, her fields are sown with introduced grains and grasses, and yield abundantly. But alien weeds have come in too. Native pests are few in number, but some of the most aggressive weeds have intruded themselves, to the detriment of the native flora.

(iii.) *Persistence of Types.* Though there is every probability that individual varieties have been eliminated in the various terrestrial convulsions that have altered the land surface of this part of the globe, there is good reason for believing that Nature, "so careful of the type," has not suffered the eradication of representative forms. Nor has the hand of man, careless, in the strenuous days of early colonisation, in conserving the original vegetation, stamped out any of the indigenous species. That many places have been set aside for the preservation, as virgin country, of areas where the plant covering is yet undisturbed, attests a desire to render to botanic science that assistance which only forms belonging to an early stage of vegetation, such as the Australian, can afford.

3. **Natural Orders of Plants Represented in Australia.**—The following is a list of the natural orders of plants represented in Australia :—

CLASS I.—DICOTYLEDONS.

SUB-CLASS I.—POLYPETALÆ.

1. Ranunculaceæ
2. Dilleniaceæ
3. Magnoliaceæ
4. Anonaceæ
5. Menispermaceæ
6. Nymphæaceæ
7. Papaveraceæ
8. Cruciferæ
9. Capparideæ
10. Violarieæ
11. Bixineæ
12. Pittosporeæ
13. Tremandreæ
14. Polygaleæ
15. Frankeniaceæ
16. Caryophylleæ
17. Portulaceæ
18. Elatineæ
19. Hypericineæ
20. Guttiferæ
21. Malvaceæ
22. Sterculiaceæ
23. Tiliaceæ
24. Lineæ
25. Malpighiaceæ
26. Zygophyllaceæ
27. Geraniaceæ
28. Rutaceæ
29. Simarubæ
30. Burseraceæ
31. Meliaceæ
32. Olacineæ
33. Ilicineæ
34. Celastrineæ
35. Stackhousieæ
36. Rhamneæ
37. Ampelideæ
38. Sapindaceæ
39. Anacardiaceæ
40. Leguminosæ
    Sub-Orders:
    (i) Papilionaceæ
    (ii) Cæsalpineæ
    (iii) Mimosæ
41. Rosaceæ
42. Saxifrageæ
43. Crassulaceæ
44. Droseraceæ
45. Halorageæ
46. Rhizophoreæ
47. Combretaceæ
48. Myrtaceæ
49. Melastomaceæ
50. Lythrarieæ
51. Onagrarieæ
52. Samydaceæ
53. Passifloreæ
54. Cucurbitaceæ
55. Ficoideæ
56. Umbelliferæ
57. Araliaceæ
58. Cornaceæ
59. Loranthaceæ
60. Caprifoliaceæ
61. Rubiaceæ
62. Compositæ

SUB-CLASS II.—MONOPETALÆ.

63. Stylideæ
64. Goodenovieæ
65. Campanulaceæ
66. Ericaceæ
67. Epacrideæ
68. Plumbagineæ
69. Primulaceæ
70. Myrsineæ
71. Sapotaceæ
72. Ebenaceæ
73. Styracaceæ
74. Jasmineæ
75. Apocyneæ
76. Asclepiadeæ
77. Loganiaceæ
78. Gentianeæ
79. Hydrophyllaceæ
80. Boragineæ
81. Convolvulaceæ
82. Solaneæ
83. Scrophularineæ
84. Lentibularieæ
85. Orobanchaceæ
86. Gesneraceæ
87. Bignoniaceæ
88. Acanthaceæ
89. Pedalineæ
90. Myoporineæ
91. Selagineæ
92. Verbenaceæ
93. Labiatæ
94. Plantagineæ
95. Phytolaccaceæ
96. Chenopodiaceæ
97. Amarantaceæ
98. Paronychiaceæ
99. Polygonaceæ
100. Nyctagineæ
101. Myristiceæ
102. Monimiaceæ
103. Laurineæ
104. Proteaceæ
105. Thymeleæ
106. Elæagnaceæ
107. Nepenthaceæ
108. Euphorbiaceæ
109. Urticeæ
110. Casuarineæ
111. Piperaceæ
112. Aristolochiaceæ
113. Cupiliferæ
114. Santalaceæ
115. Balanophoreæ
116. Coniferæ
117. Cycadeæ

CLASS II.—MONOCOTYLEDONS.

118. Hydrocharideæ
119. Scitamineæ
120. Orchideæ
121. Burmanniaceæ
122. Irideæ
123. Amaryllideæ
124. Taccaceæ
125. Dioscorideæ
126. Roxburghiaceæ
127. Liliaceæ
128. Pontederaceæ
129. Philydraceæ
130. Xyrideæ
131. Commellinaceæ
132. Juncaceæ
133. Palmæ
134. Pandanaceæ
135. Aroideæ
136. Typhaceæ
137. Lemnaceæ
138. Naiadeæ
139. Alismaceæ
140. Eriocauleæ
141. Centrolepideæ
142. Restiaceæ
143. Cyperaceæ
144. Gramineæ

CLASS III.—ACOTYLEDONS (Non-flowering Vegetation).

145. Lycopodiaceæ
146. Marsileaceæ
147. Filices

§ 8. Climate and Meteorology of Australia.[1]

1. **General Description.**—In the general description of Australia, § 4.1. (i.), it is pointed out that a considerable portion (0.530) of three States of the Australian Commonwealth is north of the tropic of Capricorn, that is to say, within the States of Queensland, the Northern Territory and Western Australia, no less than 1,149,320[2] square miles belong to the tropical zone, and 1,020,720 to the temperate zone. The whole area of the Commonwealth within the temperate zone, however, is 1,825,261[3] square miles, thus the tropical part is about 0.386, or about five-thirteenths of the whole, or the "temperate" region is half as large again as the "tropical" (more accurately 1.509). By reason of its insular geographical position, and the absence of striking physical features, Australia is, on the whole, less subject to extremes of weather than are regions of similar area in other parts of the globe; and latitude for latitude Australia is, on the whole, more temperate.

The altitudes of the surface of Australia range up to a little over 7300 feet; hence its climate embraces a great many features, from the characteristically tropical to what is essentially alpine, a fact indicated in some measure by the name given to the southern portion of the Great Dividing Range, Australian Alps.

While on the coast the rainfall is often abundant, and the atmosphere moist, in some portions of the interior the rainfall is very limited, and the atmosphere dry. The distribution of forest, as might be expected, and its climatic influence, is consequently very variable. In the interior there are on the one hand fine belts of trees, on the other there are large areas which are treeless, and where the air is hot and parched in summer. Again, on the coast, even as far south as latitude 35°, the vegetation is tropical in its luxuriousness and also somewhat so in character. Climatologically, therefore, Australia may be said to present a great variety of features. The various climatological characteristics will be referred to in detail.

2. **Meteorological Divisions of Australia.**—The Commonwealth Meteorologist has divided Australia, for climatological and meteorological purposes, into five divisions. The boundaries between these may be thus defined:—(*a*) between divisions I. and II., the boundary between South and West Australia, viz., the 129th meridian of east longitude; (*b*) between divisions II. and III., starting at the Gulf of Carpentaria, along the Norman River to Normanton, thence a straight line to Wilcannia, on the Darling River, New South Wales; (*c*) between divisions II. and IV., from Wilcannia along the Darling River to its junction with the Murray; (*d*) between divisions II. and V., from the junction of the Darling and Murray Rivers, along the latter to Encounter Bay; (*e*) between divisions III. and IV., starting at Wilcannia, along the Darling, Barwon, and Dumaresq Rivers to the Great Dividing Range, and along that range and along the watershed between the Clarence and Richmond Rivers to Evans Head on the east coast of Australia; (*f*) between divisions IV. and V., from the junction of the Darling and Murray Rivers along the latter to its junction with the Murrumbidgee, along the Murrumbidgee to the Tumut River, and along the Tumut River to Tumut, thence a straight line to Cape Howe; (*g*) division V. includes Tasmania.

The populations included within these boundaries on 30th June, 1907, may be taken approximately as follows:—

Division	I.	II.	III.	IV.	V.
Population	260,000	481,000	537,000	1,369,000	1,511,000

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[1] The meteorological data and statistics, and the information generally for this article, are furnished by H. A. Hunt, Esquire, F.R.M.S., Commonwealth Meteorologist.

[2] In the article "Australia" in the Encyclopædia Britannica, Vol. XXX., p. 796, this area is given as 1,145,000 square miles.

[3] Given as 1,801,700 square miles in the work above quoted, where, however, the statistics are said "to refer only to the continental States of the Federation, not to Tasmania."

In these divisions the order in which the capitals occur is as follows:—(i.) Perth, (ii.) Adelaide, (iii.) Brisbane, (iv.) Sydney, (v.) Melbourne, (vi.) Hobart, and for that reason the climatological and meteorological statistics will be set forth in the indicated order in this publication.

(i.) *Special Climatological Stations.* The latitudes, longitudes, and altitudes of special stations, the climatological features of which are graphically represented hereinafter, are as follows:—

SPECIAL CLIMATOLOGICAL STATIONS.

Locality.	Height above Sea Level.	Latitude. S.		Longitude. E.		Locality.	Height above Sea Level.	Latitude. S.		Longitude. E.	
	Feet.	deg.	min.	deg.	min.		Feet.	deg.	min.	deg.	min.
Melbourne ...	91	37	50	144	59	Port Darwin ...	97	12	28	130	51
Sydney	144	33	51	151	13	Daly Waters ...	700	16	16	133	23
Brisbane ...	137	27	28	153	20	Alice Springs ...	1926	23	38	133	37
Adelaide ...	141	34	57	138	35	Dubbo	863	32	18	148	35
Perth	197	31	57	115	51	Laverton ...	1530	28	40	122	23
Hobart	160	42	52	147	22	Coolgardie ...	1402	30	57	121	10

3. **Temperatures.**—In respect of Australian temperatures generally it may be pointed out that the isotherm for 70° Fahrenheit extends in South America and South Africa as far south as latitude 33°, while in Australia it reaches only as far south as latitude 30°, thus shewing that, on the whole, Australia has a more temperate climate when compared latitude for latitude with places in the Southern Hemisphere.

The comparison is even more favourable when the Northern Hemisphere is included in the comparison, for in the United States the 70° isotherm extends in several of the western States as far north as latitude 41°. In Europe the same isotherm reaches almost to the southern shores of Spain, passing, however, afterwards along the northern shores of Africa till it reaches the Red Sea, when it bends northward along the eastern shore of the Mediterranean till it reaches Syria. In Asia nearly the whole of the land area south of latitude 40° N. has a higher isothermal value than 70°.

The extreme range of shade temperatures in summer and winter in a very large part of Australia amounts to probably only 81°. In Siberia, in Asia, the similar range is no less than 171°, and in North America 153°, or say nearly double of the Australian range.

Along the northern shores of the Australian continent the temperatures are very equable. At Port Darwin, for example, the difference in the means for the hottest and coldest months is only 9.4°, and the extreme readings for the year, that is, the highest maximum in the hottest month and the lowest reading in the coldest month, shews a difference of under 40°.

Coming southward the extreme range of temperature increases gradually on the coast, and in a more pronounced way inland.

The detailed temperature results for the several capitals of the States of Australia are shewn on the Climatological Tables hereinafter. It will suffice here to briefly refer to special features.

(i.) *Perth.* Meteorological observations were taken in the Perth Botanical Gardens as far back as 1876, but since the conditions surrounding the instruments and the situation of the station relative to Perth cannot be regarded as quite satisfactory, the more exact climate history of Perth did not properly commence until 1897, when the present Observatory was established. During the period 1897 to 1906, the mean annual shade temperature of Perth was 64°, about a degree higher than that for Sydney and Adelaide, over 7° higher than that for Melbourne, and 10° above that for Hobart, but, on the other hand, 4° below that for Brisbane. The average temperature for the month of January is 73.5°, and for July 55°.

The extreme maximum shade record of 107° was registered in January, 1897, and the lowest minimum shade temperature was 36.4°, viz., in July, 1906.

(ii.) *Adelaide.* In Adelaide the climate is drier and more sunny than in the other capitals, and, consequently, radiation is less hindered. The extremes of heat are consequently somewhat more marked, especially in the summer months. The mean shade temperature for January is 74.1°, and that of July 51.6°. Records of the temperature having reached 100° exist for each of the six summer months of October to March, and of having exceeded 110° exist for each of those months with the exception of October. The highest record of shade temperature in Adelaide is 116.3, registered in January, 1858, and the lowest 32.2°; a range of 84.1°. The freezing point, although closely approached, has never actually been reached by the shade temperature thermometers, notwithstanding the fact that records have been kept for 50 years. Frosts have, however, occurred on the grass (four feet below the shade thermometers) at various times between the beginning of April and the end of November.

(iii.) *Brisbane.* In Brisbane the monthly mean shade temperature ranges from 77.3° in January to 58.0° in July, a difference of 19.3°. The extremes have varied from 108.9° in January to 36.1° in July, viz., through a range of 72.8°.

(iv.) *Sydney.* In Sydney the highest monthly mean is 71.5°, recorded in January, while the lowest, again in July, is 52.3°, giving a range of 19.2°.

The extremes of shade temperature recorded at Sydney over a period of nearly half a century are 108.5° in January, 1896, and 35.9° in July, 1890, *i.e.*, a range of 72.4°.

(v.) *Melbourne.* In Melbourne, the January mean shade temperature averages 66.2°, and that of July 47.7°, the highest reading ever recorded being 111.2° in January, 1862, and the lowest, 27.0° in July, 1869.

(vi.) *Hobart.* The mean temperature for the hottest month at Hobart is 63.2°, and that of the coldest 39.4°; the highest reading ever recorded being 105.0° in January, 1900, and the lowest 27.7°, nearly a degree higher than the lowest experienced in Melbourne.

(vii.) *Hottest and Coldest Parts.* A comparison of the temperatures recorded at coast and inland stations shews that, in Australia as in other continents, the range increases with increasing distance from the coast.

In the interior of Australia, and during exceptionally dry summers, the temperature occasionally reaches or exceeds 120° in the shade, and during the dry winters the major portion of the country to the south of the tropics is subject to ground frosts. An exact knowledge of temperature disposition cannot be determined until the interior becomes more settled, but from data procurable, it would appear that the hottest area of the Continent is situated in the northern part of Western Australia, about the Marble Bar and Nullagine goldfields, where the maximum shade temperature during the summer sometimes exceeds 100° for days, and even weeks, continuously. The coldest part of the Commonwealth is the extreme south-east of New South Wales and extreme east of Victoria, namely, the region of the Australian Alps. Here the temperature seldom, if ever, reaches 100°, even in the hottest of seasons.

In *Tasmania* also, although occasionally hot winds may cross the Straits and cause the temperature to rise to 100° or so in the low-lying parts, yet the island as a whole enjoys a most moderate and equable range of temperature throughout the year.

(viii). *Monthly Maximum and Minimum Temperatures.* The mean monthly maximum and minimum temperatures can be best shewn by means of graphs, which exhibit the nature of the fluctuation for each for the entire year. In the diagram (on page 129) for nine representative places in Australia, the upper heavy curves shew the mean maximum, the lower heavy curves, the mean minimum temperatures based upon daily observations. On the same diagram the thin curves shew the relative humidities (see next section).

4. **Relative Humidity.**—Next after temperature the degree of humidity may be regarded as of great importance as an element of climate; and the characteristic differences of relative humidity between the various capitals of Australia call for special remark. For nine representative places the variations of humidity are shewn on the preceding graph, which gives results based upon daily observations of the greatest and least humidity. Hitherto difficulties have been experienced in many parts of Australia in obtaining satisfactory observations for a continuous period of any length. For this reason it has been thought expedient to refer to the records of humidity at first order stations only, where the results are thoroughly reliable. Throughout the degree of humidity given will be what is known as *relative humidity*, that is, the percentage of aqueous vapour actually existing to the total possible if the atmosphere were saturated.

(i.) *Perth.* At Perth the mean annual humidity is 63; the greatest monthly mean is 94, and is in June, and the lowest 37, in February.

(ii.) *Adelaide.* At Adelaide the mean annual humidity is only 56; the mean monthly humidity has been as low as 35 in January, and as high as 84 in June.

(iii.) *Brisbane.* In Brisbane the mean annual humidity is 68.2; the lowest recorded is 47, and is in September, and the highest 85 in the months of March and May.

(iv.) *Sydney.* In Sydney the mean annual humidity is 73.2; the greatest monthly average, which occurred in May, 1889, the wettest month on record during the last forty years, was 89.7, while the lowest monthly mean, 55.4, occurred in the month of October, 1867.

(v.) *Melbourne.* The mean annual humidity in Melbourne is 72; the greatest monthly average 88, in June and July, and the lowest 54, in February.

(vi.) *Hobart.* Hobart's mean annual humidity is 74, the highest 92, and the lowest 56.

From the above results it is seen that, in respect of relative humidity, Hobart has the first place, while Sydney, Melbourne, Brisbane, Perth and Adelaide follow in the order stated, Adelaide being the driest. The graphs on page 129 shew the annual variations in humidity. It will be observed that the *relative* humidity is ordinarily but not invariably great when the temperature is low.

5. **Evaporation.**—The rate and quantity of evaporation in any territory is influenced by the prevailing temperature, and atmospheric humidity, pressure and movement. In Australia the question is of perhaps more than ordinary importance; since in its drier regions water has often to be conserved in "tanks"[1] and dams. The magnitude of the economic loss by evaporation will be appreciated from the following records, which have been obtained from either jacketted tanks sunk into the ground, or from jacketted vessels exposed on the surface.

The average total evaporation at Sydney is 37.42 inches; at Melbourne, 38.33 inches; at Adelaide, 54.97 inches; and at Perth, 65.70 inches, these results being based respectively upon 46, 35, 37 and 9 years' observations. For Brisbane the result is 86.64 inches, based upon 4 years' observations only, and determined by means of a Piche's tube evaporimeter.

In the interior of New South Wales the annual evaporation is as high as 84 inches, at Coolgardie, Western Australia. it was 85 inches in 1905, and at Laverton in the same year, 140.8 inches, or nearly 12 feet.

(i.) *Monthly Evaporation Curves.* The curves shewing the mean monthly evaporation in various parts of the Commonwealth will disclose how characteristically different are the amounts for the several months in different localities. The evaporation for characteristic places is shown on diagram shewing also rainfalls (see page 130).

(ii.) In the interior of Australia the possible evaporation is often greater than the actual rainfall. Since, therefore, the loss by evaporation depends largely on the exposed area, tanks and dams so designed that the surface shall be a minimum are advantageous. Similarly, the more protected from the direct rays of the sun and from winds, by means

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[1] In Australia artificial storage ponds or reservoirs are called "tanks."

of suitable tree planting, the less will be the loss by evaporation: these matters are of more than ordinary concern in the drier districts of Australia.

6. **Rainfall.**—As even a casual reference to climatological maps, indicating the distribution of rainfall and prevailing direction of wind, would clearly shew, the rainfall of any region is determined mainly by the direction and route of the prevailing winds, by the varying temperatures of the earth's surface over which they blow, and by the physiographical features generally.

Australia lies within the zone of the south-east and westerly trade winds. The southern limit of the south-east trade strikes the eastern shores at about 30° south latitude. Hence we find that, with very few exceptions, the heaviest rains of the Australian continent are precipitated along the Pacific slopes to the north of that latitude, the varying quantities being more or less regulated by the differences in elevation of the shores and of the chain of mountains, upon which the rain-laden winds blow, from the New South Wales northern border to Thursday Island. The converse effect is exemplified on the north-west coast of Western Australia from the summer south-east trade winds. Here the prevailing winds, blowing from the interior of the continent instead of from the ocean, result in the lightest coastal rain in Australia.

The westerly trade winds, which skirt the southern shores, are responsible for the very reliable, although generally light, rains enjoyed by the south-western portion of Western Australia, by the south-eastern agricultural areas of South Australia, by a great part of Victoria, and by the whole of Tasmania.

(i.) *Factors determining Distribution and Intensity of Rainfall.* The distribution and intensity of rainfall in the interior of the continent, and also to some extent in the areas already mentioned, are governed by the seasonal peculiarities of three distinct atmospheric control systems, the most important of which is, undoubtedly, the anticyclonic stream. This stream, which girdles the earth and embraces approximately the region between 15° and 4° south latitude, breaks up into vast elliptically-shaped bodies of circulating atmosphere, measuring frequently 3000 miles in their major and 2000 miles in their minor axes. In passing over Australia from west to east, these great bodies of circulating air cause moist-laden winds to sweep across the continent from the surrounding oceans. The front-circulation brings in winds from the Southern Ocean, and the rear-circulation those from the equatorial seas.

The rain-invoking agent second in order of importance because of its reliability is the well-known "V-shaped depression." The sphere of operation of this latter disturbance is ordinarily the southern half of the continent, although occasionally it may extend its influence to tropical latitudes. The western half of this type of disturbance, with a southerly wind circulation, is the portion from which rain is most frequently to be expected, but occasionally good falls of rain, attended with electrical manifestations, are liberated from the warm easterly portion.

The third agent associated with the production of rain is the tropical depression more popularly known as the "monsoonal depression." This disturbance may be in active evidence for a succession of seasons, and then be conspicuously absent for a number of years, thus raising the question whether, after all, it can be regarded as in any way a distinctive feature of Australian meteorology.

When these disturbances are actively operative in the production of rain the effect on the country generally, and the economic results for the succeeding season, are very pronounced. The interior of the continent becomes transformed. The plains, which ordinarily have so profound an effect on the heat winds of the summer, are deluged with rain, and respond immediately with an astonishingly luxurious growth of grass and herbage. The air is both tempered in heat and loses its dryness for considerable periods after their visitations.

The distribution of rain for monsoonal disturbances is, however, very capricious in comparison with that precipitated by the southern "depressions." During some seasons the whole of the northern half of the continent will benefit to a fairly uniform degree, at another time some special region will be favoured. A remarkable example of this peculiarity occurred in 1902, for when monsoonal rains were copiously falling over the major portion of Western Australia, the eastern half of the continent was suffering from severe drought conditions.

During other seasons tongue-shaped regions extending southwards from the northern shores of the continent will be particularly favoured in regard to rain. These regions may extend to the interior of Western Australia, and simultaneously others may occur in the Central Territory, in Western Queensland, and in the interior of New South Wales.

It is thus obvious that different parts of the continent are mainly dependent upon forms of atmospheric disturbances for what may be called their fundamental rains, and since there is a seasonal tendency for a particular class of storms to predominate, it rarely happens that any year passes with a good rain being universally enjoyed. Again the condition of drought can hardly affect the whole of the continent at the same time. At the same time a more than ordinarily fortunate condition in one part of the continent ordinarily implies drought conditions in another, or *vice-versa.* Thus in New South Wales, monsoonal rains, so beneficial to its north-western districts, rarely extend during the same season to coastal areas, or to Southern Riverina. For this reason, it may happen occasionally that sheep may with advantage, be sent 500 or 600 miles from the coast for feed and water. Should the southern or antarctic low-pressures be the predominating influence, the country to the south of the Murrumbidgee River is benefiting at the expense of the remainder of the State.

Good coastal season ordinarily depends upon an anticyclonic control; when such exists, the country west of the tablelands usually wants water.

A good season for Australia as a whole is dependent upon many circumstances. Not only must the main rain-giving storms be well represented, but other favourable conditions must also coexist. The general rate of translation of the atmosphere across the continent is a factor of the utmost importance. Another is the latitude the cyclones and anticyclones are moving in, and, further, the daily or periodic surgings of high and low pressures to and from the equator is also a factor of considerable moment.

(ii.) *Time of Rainfall.* Monsoonal rains affect the northern parts of the continent in December or January, and may continue with diminishing energy for nearly six months of the year. As they penetrate into higher latitudes the period of action is delayed, but is not shortened, though the quantities of the fall materially lessen. Antarctic rains are experienced during the winter months of the year, the resultant quantities being reliable and consistently regular. The heaviest totals from this source are precipitated on the west coast of Tasmania. Thus at Queenstown the total for one year exceeded 140 inches, and even the average is 127.81 inches.

Anticyclonic rains occur at all times of the year, but more markedly from March to September. They benefit particularly the southern area of the continent and are responsible for many of the heaviest rainfalls and floods on the coastal districts of New South Wales.

(iii.) *Wettest and Driest Regions.* The wettest place in Australia is Geraldton, on the north-east coast of Queensland, where the average annual rainfall is no less than 145 inches, the maximum yearly total being 211.24 inches and the minimum 69.87 inches. The difference of range between these extremes is 141.37 inches.

The driest known part of the continent is about the Lake Eyre district in South Australia (the only part of the continent below sea level), where the annual average is but 5 inches, and where it rarely exceeds 10 inches for the twelve months.

The inland districts of Western Australia have until recent years been regarded as the driest part of Australia, but authentic observations taken during the past decade at settled districts in the extreme north-east of that State shew that the annual average is from 10 and 12 inches.

(iv.) *Quantities and distribution of Rainfall generally.* The departure from the normal rainfall increases greatly and progressively from the southern to the northern shores of the continent, and similarly also at all parts of the continent, subject to capricious monsoonal rains, as the comparisons hereunder will shew. The general distribution is best seen from the map on page 132, shewing the areas subject to average annual rainfalls lying between certain limits. The areas so defined are shewn in the following table:—

DISTRIBUTION OF AVERAGE RAINFALL.

Average Annual Rainfall.	N.S.W.	Victoria.	Queensland.	South Aus.	Northe'n Territ'y.	Western Aus.	Tasmania.	Commonwealth.
	sqr. mls.	sqr. mls.	sqr. mls.	sqr. mls.	sqr. mls.	sqr. mls.	sqr. mls.	sqr. mls.
Under 10 inches	81,144	nil.	135,600	306,663	6,300	408,300	nil.	938,007
10—20 ,,	116,363	36,300	255,300	57,935	213,430	400,720	nil.	1,080,048
20—30 ,,	77,910	27,900	173,400	13,908	96,790	118,700	11,395	515,008
30—40 ..	20,414	18.770	58,700	1,198	120,600	39,100	5,396	264,178
Over 40 ,,	14,541	4,914	47,500	366	86,500	14,100	9,424	177,345
Total area ...	310,372	87,884	670,500	380,070	523,620	975,920	26,215	2,974,581

Referring first to the southern capitals it may be noted that the average at Melbourne from authentic records is 26.31 inches; the maximum 36.42, and minimum 15.61; the range therefore is 20.81 inches. At Adelaide the average determined from 67 years' totals is 20.89, the maximum 30.63, the minimum 13.85, and the range therefore 16.78 inches. At Hobart 23.40 inches is the average annual rainfall, 40.67 is the highest total for one year, 13.43 is the lowest; thus 27.24 inches is the extreme range. The average for Perth is 33.03 inches, 46.73 being the maximum and 20.48 inches the minimum; the range is therefore 26.25 inches. These figures appear to constitute an exception to the general rule, but it should be mentioned as a possible explanation that records have there been taken only since 1876, whereas the records at the other cities date from 1840 or thereabouts.

Continuing the comparison of rainfall figures, Sydney's average annual total is 48.80 inches, its maximum 82.81 in 1860, and minimum 23.01 in 1888, thus the range is 57.80 inches. At Brisbane the disparities are greater still. There the average is 47.47 inches —a trifle lower than that of Sydney—the annual maximum was 88.26 inches in 1893, the minimum 16.17 inches in 1902, and the range therefore 62.09 inches.

In order to shew how the rainfall is distributed throughout the year in various parts of the continent, the figures of representative towns have been selected. Port Darwin, typical of the Northern Territory, shews that in that region nearly the whole of the rainfall occurs in the summer months, while little or nothing falls in the middle of the year. The figures of Perth, as representing the south-western part of the Continent, are the converse, for while the summer months are dry, the winter ones are very wet. In Melbourne and Hobart the rain is fairly well distributed throughout the twelve months, with a maximum in October in the former, and in November in the latter. The records at Alice Springs and Daly Waters indicate that in the central parts of Australia the wettest months are in the summer and autumn. In Queensland, as in the Northern Territory, the heaviest rains fall in the summer months, but good averages are also maintained during the other seasons.

On the coast of New South Wales, the first six months of the year are the wettest, with slight excesses in April and July; the averages during the last six months are fair and moderately uniform. In general it may be said that one-fourth of the area of the continent, principally in the eastern and northern parts, enjoys an annual average rainfall of from 20 to 50 inches, the remaining three-fourths receiving generally from 10 to 15 inches.

(v.) *Curves of Rainfall and Evaporation.* The relative amounts of rainfall and evaporation at different times through the year are best seen by referring to the graphs for a number of characteristic places. It will be recognised at once how large is the evaporation, when water is fully exposed to the direct rays of the sun, and to wind, etc.

(vi.) *Tables of Rainfall.* The table of rainfall for a long period of years for each of the various Australian capitals, affords information as to the variability of the fall in successive years, and the list of the more remarkable falls furnishes information as to what may be expected on particular occasions.

RAINFALL AT THE AUSTRALIAN CAPITALS.

Year.	Perth.			Adelaide.			Brisbane.			Sydney.			Melbourne.			Hobart.		
	Amount.	No. of Days.	10 Years' Means.	Amount.	No. of Days.	10 Years' Means.	Amount.	No. of Days.	10 Years' Means.	Amount.	No. of Days.	10 Years' Means.	Amount.	No. of Days.	10 Years' Means.	Amount.	No. of Days.	10 Years' Means.
	in.		in.	in.		in.	in.		in.	in.		in.	in.		in.	in.		in.
1840	...	...	...	24.23	99	...	29.32	...	...	58.52	150	...	22.57	...	...	...	...	...
1	...	...	...	17.96	93	...	49.31	...	...	76.31	142	...	30.18	...	...	13.95	...	...
2	...	...	...	20.31	122	...	28.82	...	...	48.82	137	...	31.16	...	...	23.60	...	...
3	...	...	...	17.19	104	...	51.23	...	...	62.78	168	...	21.54	...	...	13.43	...	...
4	...	...	...	16.88	136	...	63.21	...	...	70.67	157	...	30.74	...	...	26.25	...	...
5	...	...	...	18.83	124	...	39.19	...	...	62.03	132	...	23.93	...	...	16.68	...	...
6	...	...	...	26.89	108	20.33 (7 yr.)	31.43	...	41.79 (7 yr.)	43.83	139	60.42 (7 yr.)	30.53	...	27.24 (7 yr.)	21.96	...	19.31 (6 yr.)
7	...	...	...	27.61	107	...	...	...	...	42.80	142	...	30.18	...	...	14.46	...	...
8	...	...	...	19.74	114	...	42.59	...	...	59.17	137	...	33.15	...	...	23.62	...	...
9	...	...	...	25.44	110	...	...	...	...	21.48	140	...	44.25	...	...	33.51	...	...
1850	...	...	...	19.50	83	...	...	...	...	44.88	157	...	26.98	...	...	14.51	...	...
1	...	...	...	30.63	128	...	...	...	...	35 14	142	...	...	...	...	17.98	...	...
2	...	...	...	27.34	118	...	...	...	...	43.78	145	...	...	...	...	23.62	...	...
3	...	...	...	27.00	127	...	...	...	...	46.11	130	...	...	...	...	14.53	...	...
4	...	...	...	15.35	105	...	...	...	...	29.28	136	...	...	...	...	30.56	...	...
5	...	...	...	23.15	124	...	...	...	...	52.85	138	...	28.21	...	...	18.25	131	...
6	...	...	...	24.02	118	23.98	...	...	...	43.31	116	41.88	29.75	134	...	22.73	152	21.38
7	...	...	...	21.16	107	...	...	...	..	50.95	135	...	28.90	138	...	17.14	113	...
8	...	...	...	21.52	107	...	43.00	...	...	39.60	139	...	26.01	158	...	33.07	129	...
9	...	...	...	14.85	95	...	35.00	...	...	42.06	128	...	21.82	156	...	23.31	159	...
1860	...	...	...	19.67	119	...	54.63	144	...	82.81	182	...	25.38	133	...	21.05	142	...
	...	...	...	25.19	120	...	69.44	155	...	58.36	157	...	29.16	159	...	28.19	...	...
2	...	...	...	22.84	114	...	28.27	98	...	23.98	111	...	22.08	139	...	21.72	...	...
3	...	...	...	22.92	131	...	68.82	146	...	47.08	152	...	36.42	165	...	40.67	...	...
4	...	...	...	19.45	109	...	47.00	114	...	69.12	187	...	27.40	144	...	28.11	...	...
5	...	...	...	14.75	96	...	24.11	52	...	36.29	128	...	15.94	119	...	23.07	...	...
6	...	...	...	19.94	115	20.23	51.18	142	46.83 (9 yr.)	36.81	149	48.71	22.41	107	25.55	23.55	...	25.99
7	...	...	...	19.35	106	...	61.04	112	...	59.68	126	...	25.79	133	...	22.27	...	...
8	...	...	...	17.88	103	...	35.98	110	...	43.05	127	...	18.27	120	...	18.08	...	...
9	...	...	...	13.85	110	...	54.39	114	...	48.19	134	...	24.58	129	...	23.87	...	...
1870	...	...	...	24 10	132	...	79.06	154	...	64.22	178	...	33.77	129	...	27.53	...	...
1	...	...	...	23.51	122	...	45.45	119	...	52.27	141	...	30.17	125	...	18.25	...	...
2	...	...	...	23.16	130	...	49.22	131	...	37.12	161	...	32.52	136	...	31.76	...	...
3	...	...	...	21.60	114	...	62.02	138	...	73.40	176	...	25.60	134	...	23.43	...	...
4	...	...	...	17.23	127	...	38.71	135	...	63.60	173	...	28.10	134	...	24.09	...	...
5	...	...	...	29.21	157	...	67.03	162	...	46.25	153	...	32.87	158	...	29.25	...	...
6	28 73	100	...	13.43	110	20.33	53.42	130	54.63	45.69	136	53.35	24.04	134	27.57	23.63	...	24.22
7	20.48	103	...	24.95	135	...	30.28	119	...	59.66	147	...	24.10	124	...	20.82	...	...
8	39.72	143	...	22.08	112	...	56 33	134	...	49.77	129	...	25.36	116	...	29.76	...	...
9	41.34	106	...	20.69	130	...	67.30	157	...	63.19	167	...	19 28	127	...	21.07	...	...
1880	31.79	116	. .	22.48	142	...	49.12	134	...	29.51	142	...	28.48	147	...	25.05	...	...
1	24.78	101	...	18.02	135	...	29.39	117	...	41.09	163	...	24.08	134	...	22.09	...	...
2	35.68	109	...	15.70	134	...	42.62	121	...	42.28	112	...	22.40	131	...	30.30	...	...
3	39.65	122	...	26.76	161	...	32.22	114	...	46.92	157	...	23.71	130	...	24.04	...	...
4	31.96	92	...	18.74	138	...	43.49	136	...	44.04	159	...	25.85	128	...	21.55	171	...
5	33.44	110	...	15.89	133	...	26.85	112	...	39.91	145	...	26.94	123	...	28.29	176	...
6	28.90	89	32.77	14.42	172	19.97	53.66	152	43.13	39.43	152	45.58	24.00	128	24.42	21.39	...	24.44
7	37.52	105	...	25.70	164	...	81.54	238	...	60.16	189	...	32.39	153	...	24.21	174	...
8	27.83	117	...	14 55	131	...	33.08	143	...	23.01	132	...	19.42	123	...	18.45	151	...
9	39.96	123	...	26.60	123	...	49.36	155	...	57.16	186	...	27.14	125	...	30.80	180	...
1890	46.73	126	...	25.78	139	...	73.02	162	...	81.42	184	...	24.20	140	...	27.51	173	...
1	30.33	93	...	14.01	113	...	41.68	143	...	55.30	200	...	26.73	126	...	23.25	160	...
2	31.23	122	...	21.53	137	...	64.97	145	...	69.26	189	...	24.69	124	...	17.17	...	...
3	40.12	145	...	21.49	129	...	88.26	147	...	49.90	208	...	26.80	140	...	27.46	146	...
4	23.72	133	...	20.78	134	...	44.02	143	...	38.22	188	...	22.60	138	...	27.39	151	...
5	33.01	123	...	21.28	130	...	59.11	105	...	31.86	170	...	17.04	131	...	19.93	121	...
6	31.50	103	34.20	15 17	121	20.69	44.97	121	58.00	42.40	157	50.87	25.16	124	24.62	20.87	135	23.70
7	27.25	101	...	15.42	119	...	42.53	115	...	42.52	136	...	25.85	117	...	20.45	153	...
8	32.04	109	...	20.75	116	...	60.60	131	...	43.17	149	...	15.61	102	...	20.40	164	...
9	31.96	104	...	18.84	119	...	37.35	137	...	55.90	172	...	28.87	116	...	20.68	166	...
1900	36.25	116	...	21.68	133	...	34.41	110	...	66.54	170	...	28.09	139	...	19.13	136	...
1	35.84	118	...	18.01	124	...	38.48	110	...	40.10	151	...	27.45	113	...	23.68	147	...
2	26.52	89	...	16.02	123	...	16.17	87	...	43.07	176	...	23.08	102	...	21.90	150	...
3	35.45	139	...	25.47	134	...	49.27	136	...	38.62	169	...	28.43	130	...	25.85	139	...
4	34.62	118	...	20.31	117	...	33.23	124	...	45.93	155	...	29.72	128	...	22.40	139	...
5	34.00	101	...	22.28	131	...	36.76	108	...	35.03	144	...	25.64	129	...	32.08	168	...
6	31.51	112	32.54	26.51	127	20.53	42.84	125	39.16	31.89	159	44.28	22.29	114	25.50	23.28	155	22.98
Mns.			33.03			20.89			47.47			48.80			26.35			23.38
No. of Yrs.			(31)			(67)			(57)			(67)			(63)			(66)

(v.) *Remarkable Falls of Rain.* The following are the more remarkable falls of rain in the States of Western Australia, South Australia, Queensland and New South Wales :—

HEAVY RAINFALLS, NEW SOUTH WALES, UP TO 1906 INCLUSIVE.

Name of Town or Locality.	Date.	Amnt. ins.	Name of Town or Locality.	Date.	Amnt. ins.
Albion Park	8 Feb., 1895	10.00	Kempsey	10 Mar., 1893	10.34
Albury	14 ,, 1898	10.70	Leconfield	9 ,, ,,	14.53
Alme Dorrigo	22 Jan., 1893	10.27	Liverpool	23 Feb., 1874	10.39
Anthony	28 Mar., 1887	17.14	Maitland W.	9 Mar., 1893	14.79
,,	15 Jan., 1890	13.13	Major's Creek	14 Feb., 1898	12.32
Arnold Grove	28 May, 1889	11.13	Mittagong	6 Mar., 1893	11.71
,, ,,	20 Mar., 1892	10.08	Morpeth	9 ,, ,,	21.52
Araluen	14 Feb., 1898	10.51	Mount Kembla	14 Feb., 1898	10.25
,,	15 Feb., 1898	13.36	Myra Vale	14 ,, ,,	10.00
Billambil	14 Mar., 1894	12.94	Nambucca Heads	3 Apr., 1905	10.62
Bowral	6 ,, 1893	11.94	Nepean Tunnel	14 Feb., 1898	12.30
Bowraville	22 June, 1898	11.50	Newcastle	19 Mar., 1871	11.17
Broger's Creek	14 Feb., ,,	20.05	,,	9 ,, 1893	11.14
Bulli Mountain	19 Mar., 1894	10.45	Nowra	11 July, 1904	11.50
,, ,,	13 Feb., 1898	17.14	Parramatta	28 May, 1889	11.94
Burwood	28 May, 1889	11.75	,,	20 Mar., 1892	11.01
Camden	11 July, 1904	10.90	Port Macquarie	9 Nov., 1887	10.76
Camden Haven	22 Jan., 1895	12.23	Port Stephens	9 Feb., 1889	10.15
Canley Vale	28 May, 1889	10.06	Prospect	28 May, 1889	12.37
,, ,,	20 Mar., 1892	10.85	Raymond Terrace	28 Sep., 1903	10.32
Castle Hill	28 May, 1889	13.49	Richmond	28 May, 1889	12.18
Colombo Lyttleton	5 Mar., 1893	12.17	Robertson	14 Feb., 1898	10.00
Condong	27 ,, 1887	18.66	,,	10 July, 1904	10.50
,,	15 Jan., 1890	11.50	Rooty Hill	27 May, 1889	11.85
Cookville	1 Apr., 1892	11.31	Rylstone	28 ,, ,,	10.26
Coramba	11 June, 1893	10.83	Seven Oaks	22 June, 1898	11.06
Cordeaux River	26 Feb., 1873	10.98	Springwood	7 Mar., 1894	10.55
,, ,,	3 ,, 1890	11.51	Taree	28 Feb., 1892	12.24
,, ,,	14 Feb., 1898	22.58	Terara	26 ,, 1873	12.57
,, ,,	31 Aug., 1906	10.31	Tomago	9 Mar., 1893	13.76
Cudgen	15 Mar., 1894	10.23	Tongarra	9 July, 1904	11.10
Dapto West	14 Feb., 1898	12.05	Tongarra Farm	14 Feb., 1898	15.12
Darkes' Forest	8 ,, 1895	11.10	Towamba	5 Mar., 1893	20.00
Dunheved	28 May, 1889	12.40	Tweed Heads	14 Jan., 1890	10.53
Eden	4 ,, 1875	10.52	,, ,,	14 Mar., 1894	11.40
Fernmount	2 Feb., 1890	10.36	Trial Bay	9 ,, 1893	11.13
,,	2 June, 1903	11.29	Wollongong	26 Feb., 1873	11.00
Goorangoola	9 Mar., 1893	10.34	,,	5 Apr., 1882	10.00
Guy Fawkes	2 June, 1903	11.30	Woolgoolga	11 June, 1893	10.83
Hercynia	28 May, 1889	11.85	Yellow Rock	14 Feb., 1898	11.69
Holy Flat	12 Mar., 1887	12.00	South Head (near Sydney)	29 Apr., 1841	20.12
,, ,,	28 Feb., 1892	12.24	,, ,,	16 Oct., 1844	20.41
Jamberoo	14 ,, 1898	10.92			
Kareela	20 Oct., 1902	11.73			

HEAVY RAINFALLS QUEENSLAND, UP TO 1896, INCLUSIVE.

Name of Town or Locality.	Date.	Amnt. ins.	Name of Town or Locality.	Date.	Amnt. ins.
Ayr	20 Sep., 1890	14.58	Bowen Park	16 Feb., 1893	10.38
,,	25 Mar., 1891	10.19	Brisbane	21 Jan., 1887	18.31
,,	26 Jan., 1896	10.50	Bromby Park (Bowen)	14 Feb., 1893	13.28
Beenleigh	21 ,, 1887	11.30	,, ,,	20 Jan., 1894	11.20
Bloomsbury	14 Feb., 1893	17.40	Bulimna (Brisbane)	16 Feb., 1893	10.40
,,	27 Jan., 1896	10.52	Bundaberg	31 Jan., 1893	10.15
Bowen	13 Feb., 1893	14.65	Burketown	15 ,, 1891	13.58
,,	20 Jan., 1894	11.11	Bustard Head	18 Feb., 1888	10.14

HEAVY RAINFALLS, QUEENSLAND—CONTINUED.

Name of Town or Locality.	Date.	Amnt. ins.	Name of Town or Locality.	Date.	Amnt. ins.
Bustard Head	30 Jan., 1893	11.85	Lytton	13 Mar., 1892	10.60
Caboolture	21 ,, 1887	10.00	,, ...	16 Feb., 1893	11.74
Cairns	11 Feb., 1889	14.74	Mackay	17 ,, 1888	10.10
,, ...	21 Apr., 1889	12.40	,, ...	15 ,, 1893	10.46
,, ...	5 ,, 1891	14.08a	Macnade Mill		
,, ...	19 Jan., 1892	10.56	(Townsville) ...	28 Mar., 1891	10.61
Caloundra... ...	21 ,, 1887	10.50	,, ,,	15 ,, 1893	10.50
Cape Grafton ...	5 Mar., 1896	13.37	,, ,,	18 Jan., 1894	12.56
Cardwell	18 ,, 1887	10.15	,, ,,	17 Apr., 1894	14.26
,, ...	30 Dec., 1889	12.00	Marlborough ...	17 Feb., 1888	14.24
,, ...	2 Jan., 1890	10.06	,, ...	29 Jan., 1896	10.84
,, ...	23 Mar., 1890	12.00	Mein	4 Apr., 1895	10.50
Clare	26 Jan., 1896	15.30	Mooloolah... ...	13 Mar., 1892	11.53
Collaroy	30 ,, 1896	14.25	,, ...	2 Feb., 1893	29.11
Cooran	1 Feb., 1893	13.62	,, ...	9 Jun., 1893	11.50
,, ...	9 Jun., 1893	10.12	Mount Perry ...	24 Feb., 1887	10.00
Cooroy	9 ,, ,,	13.60	Mundoolun ...	21 Jan., 1887	17.95
Cressbrook ...	16 Feb., 1893	10.65	Musgrave	6 Apr., 1894	13.71
Crohamhurst			Nanango	9 Jun., 1893	10.00
(Blackall Range)	31 Jan., 1893	10.78	Nerang	15 ,, 1892	12.35
,, ,,	2 Feb., 1893	35.71	Netley(Rockhampton)	29 Jan., 1896	11.77
Crohamhurst ...	9 Jun., 1893	13.31	North Pine ...	21 ,, 1887	11.60
Cryna (Beaudesert)...	21 Jan., 1887	14.00	,, ...	16 Feb., 1893	14.97
Donaldson... ...	27 ,, 1891	11.29	Palmwoods ...	4 ,, ,,	12.30
Dungeness ...	16 Mar., 1893	22.17	Pittsworth ...	11 Mar., 1890	14.68
,, ...	19 Jan., 1894	11.84	Port Douglas ...	5 ,, 1887	13.00
,, ...	17 Apr., 1894	14.00	,, ,, ...	12 Feb., 1888	10.00
Eddington(Cloncurry)	23 Jan., 1891	10.33	,, ,, ...	20 Jan., 1892	11.50
Emu Park... ...	31 ,, 1893	10.00	,, ,, ...	23 Feb., 1894	10.25
Esk	21 ,, 1887	10.70	,, ,, ...	7 Apr., 1894	10.00
Fassifern	21 ,, ,,	10.20	Ravenswood ...	24 Mar., 1890	17.00
Geraldton	11 Feb., 1889	17.13	,, ...	27 Jan., 1896	10.52
,, ...	31 Dec., 1889	12.45	Redcliffe	21 ,, 1887	14.00
,, ...	25 Jan., 1892	11.10	,, ...	16 Feb., 1893	17.35
,, ...	6 Apr., 1894	16.02	Rockhampton ...	17 ,, 1888	10.82
,, ...	3 Mar., 1896	11.42	,, ...	29 Jan., 1896	10.53
Gladstone	18 Feb., 1888	12.37	Sandgate	21 ,, 1887	10.50
,, ...	31 Jan., 1893	14.62	,, ...	16 Feb., 1893	14.03
Glen Broughton ...	5 Apr., 1894	18.50	St. Helena... ...	16 ,, ,,	11.20
Gold Creek Reservoir	16 Feb., 1893	11.16	St. Helens (Mackay)	24 ,, 1888	12.00
Goodna	21 Jan., 1887	11.00	St. Lawrence ...	17 ,, ,,	12.10
Goondi Mill(Gerald'n)	20 ,, 1892	11.10	,, ...	30 Jan., 1896	15.00a
,, ,,	6 Apr., 1894	15.69	Tabragalba ...	21 ,, 1887	10.00
Haughton Valley ...	26 Jan., 1896	18.10	TambourineMountain	17 July, 1889	10.91
Holmwood(Woodford)	2 Feb., 1893	16.19	The Hollow (Mackay)	23 Feb., 1888	15.12
Ingham	18 Jan., 1894	12.60	,, ,,	? Mar., 1891	10.39
,, ...	7 Apr., 1894	10.10	Tooloombah ...	29 Jan., 1896	11.70
Inkerman	21 Sep., 1890	12.93	Townsville... ...	24 ,, 1892	19.20
Inneshowen			Woodford	2 Feb., 1893	14.93
(Johnstone River)	30 Dec., 1889	14.01	Woodlands (Yeppoon)	10 ,, 1889	10.00
Inskip Point ...	13 Mar., 1892	10.65	,, ,,	26 Jan., 1890	10.22
Kamerunga (Cairns)	20 Jan., 1892	13.61	,, ,,	25 Mar., 1890	14.25
,, ,, ...	23 Feb., 1894	10.10	,, ,,	31 Jan., 1893	23.07
Kamerunga ...	6 Apr., 1894	14.04	,, ,,	30 Jan., 1896	11.91
,, ...	5 ,, 1895	12.31	,, ,,	9 Feb., 1896	13.97
,, ...	5 Mar., 1896	11.81	Yandina	1 ,, 1893	20.08
Lake Nash ...	10 Jan., 1895	10.02	,, ...	9 Jun., 1893	12.70
Landsborough ...	2 Feb., 1893	25.15	Yeppoon	31 Jan., 1893	20.05
,, ...	9 Jun., 1893	12.80	,, ...	30 ,, 1896	11.02
Lytton	21 Jan., 1887	12.85			

HEAVY RAINFALLS, WESTERN AUSTRALIA, UP TO 1906 INCLUSIVE.

Name of Town or Locality.	Date.	Amnt. ins.	Name of Town or Locality.	Date.	Amnt. ins.
Balla Balla ...	20 Mar., 1899	6.00	Port Hedland ...	7 Feb., 1901	3.56
„ „ ...	21 „ 1899	14.40	„	8 „ „	9.55
Boodaril	3 Jan., 1894	10.03	Roebourne... ...	3 Apr., 1898	11.44
„	4 „ „	5.22	„	6 Mar., 1900	10.32
„	21 Mar., 1899	14.53	Tambrey	6 „ „	11.00
„	6 Feb., 1901	1.91	„	3 „ 1903	10.46
„	7 „ „	9.16	Thangoo	17-19 Feb.'96	24.18
Bamboo Creek ...	22 Mar., 1899	10.10	„	28 Dec., 1898	11.15
Carlton	11 Jan., 1903	10.64	Whim Creek ...	2 Apr., 1898	7.03
Cossack	3 Apr., 1898	12.82	„	3 „ „	29.41
„	15 „ 1900	6.89	„	20 Mar., 1899	8.89
„	16 „ „	13.23	„	21 „ „	18.17
Croydon	3 Mar., 1903	12.00	„	6 „ 1900	10.03
Cocos Island ...	29 Nov., „	14.38	„	3 „ 1903	10.44
Derby	29 Dec., 1898	13.09	Wyndham ...	27 Jan., 1890	11.60
„	30 „ „	7.14	„	11 „ 1903	9.98
Kerdiadary ...	7 Feb., 1901	12.00	„	12 „ „	6.64
Millstream ...	5 Mar., 1900	10.00	„	13 „ „	4.20
Obagama	16 Feb., 1896	3.95	Yeeda	28 Dec., 1898	8.42
„	17 „ „	6.30	„	29 „ „	6.88
„	18 „ „	7.22	„	30 „ „	6.12
Point Torment ...	17 Dec., 1906	11.86			

HEAVY RAINFALLS, SOUTH AUSTRALIA, UP TO 1901 INCLUSIVE.

Borroloola... ...	14 Mar., 1899	14.00	Pine Creek ...	8 Jan., 1897	10.35
Lake Nash ...	21 „ 1901	10.25	Port Darwin ...	7 „ „	11.67

8. **Snowfall.**—Light snow has been known to fall even as far north, occasionally, as latitude 31° S., and from the western to the eastern shores of the continent. During exceptional seasons it has fallen simultaneously over two-thirds of the State of New South Wales, and has extended at times along the whole of the Great Dividing Range, from its southern extremity in Victoria as far north as Toowoomba in Queensland. During the winter snow covers the ground to a great extent on the Australian Alps for several months where also the temperature falls below zero Fahrenheit during the night, and in the ravines around Kosciusko and similar localities the snow never entirely disappears.

The antarctic "V"-shaped disturbances are always associated with our most pronounced and extensive snowfalls. The depressions on such occasions are very steep in the vertical area, and the apexes are unusually sharp-pointed and protrude into very low latitudes, sometimes even to the tropics.

9. **Hail.**—Hail falls throughout Australia most frequently along the southern shores of the continent, and in the summer months. The size of the hailstones generally increases with distance from the coast, a fact which lends strong support to the theory that hail is brought about by ascending currents. Rarely does a summer pass without some station experiencing a fall of stones exceeding in size an ordinary hen-egg, and many riddled sheets of light-gauge galvanised iron bear evidence as to the weight and penetrating power of the stones.

Hail storms occur most frequently in Australia when the barometric readings indicate a flat and unstable condition of pressure. They are invariably associated with tornadoes or tornadic tendencies, and on the east coast the clouds from which the stones fall are generally of a remarkable sepia-coloured tint.

10. **Barometric Pressures.**—The mean annual barometric pressure in Australia varies from 29.95 inches on the north coast to 30.06 inches over the central and southern parts of the continent. In January the mean pressure ranges from 29.84 inches in the northern and central areas to 29.94 and 29.95 inches in the southern. The July mean pressure ranges from 30.04 inches at Port Darwin to 30.32 at Alice Springs. Barometer readings, corrected to mean sea level, have, under anticyclonic conditions in the interior of the continent, ranged from 30.81 inches to as low as 28.44. This lowest record was registered at Townsville during a hurricane on the 9th March, 1903. The mean annual fluctuations of barometric pressure for the capitals of Australia are shewn on page 131.

11. **Wind.**—(i.) *Trade Winds.* The two distinctive wind currents in Australia are, as previously stated, the south-east and westerly trade winds. As the belt of the earth's atmosphere in which they blow apparently follows the sun's ecliptic path north and south of the equator, so the area of the continent affected by these winds varies at different seasons of the year. During the summer months the anticyclonic belt travels in very high latitudes, thereby bringing the south-east trade winds as far south as 30° south latitude. The westerly trade winds are forced a considerable distance to the south of Australia, and are very rarely in evidence in the hot months. When the sun passes to the north of the equator, the south-east trade winds follow it, and only operate to the north of the tropics for the greater part of the winter. The westerly winds, by the same force, are brought into lower latitudes during the same period of the year. They sweep across the southern areas of the continent from the Leeuwin to Cape Howe, and during some seasons are remarkably persistent and strong. They occasionally penetrate to almost tropical latitudes, and though usually cold and dusty, are of the greatest service to the country, for being rain-bearing winds, moisture is by their agency precipitated over vast areas in the south of the Continent.

(ii.) *Land and Sea Breezes.* The prevailing winds second in order of importance are the land and sea breezes. These generally blow at right angles to the coast line in their early stages, but are deflected to the north and south in the middle and later periods of the blows.

On the east coast the sea breezes which come in from the north-east, when in full force, frequently reach the velocity of a gale during the afternoon in the summer months, the maximum hourly velocity, ordinarily attained about 3 p.m., not unfrequently attaining a rate of 35 to 40 miles per hour. This wind, although strong, is usually shallow in depth, and does not ordinarily penetrate more than 9 or 12 miles inland.

The land breezes on the east coast blow out from a south-westerly direction during the night.

On the western shores of the continent the directions are reversed. The sea breezes come in from the south-west, and the land breezes blow out from the north-east.

(iii.) *Inland Winds.* Inland, the direction of the prevailing winds is largely regulated by the seasonal changes of pressure, so disposed as to cause the winds to radiate spirally outwards from the centre of the continent during the winter months, and to circulate spirally from the seaboard to the centre of Australia during the summer months.

(iv.) *Prevailing Direction at the State Capitals.* In *Perth*, southerly is the prevailing direction for November to February inclusive, and north-north-easterly for the mid-winter months.

In *Adelaide* the summer winds are from south-west and south, and in the winter from north-east to north.

In *Brisbane*, south-east winds are in evidence all the year round.

In *Sydney*, from May to September the prevailing direction is westerly, and for the remaining seven months north-easterly.

Melbourne winter winds are from north-west to north-east, and those of the summer from south-west to south-east.

At *Hobart* the prevailing direction for the year is from north-west.

Over the greater part of Australia January is the most windy month, *i.e.*, is the month when the winds are strongest on the average, though the most violent wind storms occur at other times during the year, the time varying with the latitude.

12. Cyclones and Storms.—(i.) *General.* The "elements" in Australia are ordinarily peaceful, and although severe cyclones have visited various parts, more especially coastal areas, such visitations are rare, and may be properly described as erratic.

During the winter months the southern shores of the continent are subject to cyclonic storms, evolved from the V-shaped depressions of the southern low-pressure belt. They are felt most severely over the south-western parts of Western Australia, to the south-east of South Australia, in Bass Straits, including the coast-line of Victoria, and on the west coast of Tasmania. Apparently the more violent wind pressures from these cyclones are experienced in their northern half, that is, in that part of them which has a north-westerly to a south-westerly circulation.

Occasionally the north-east coast of Queensland is visited by hurricanes from the north-east tropics. During the first three months of the year these hurricanes appear to have their origin in the neighbourhood of the South Pacific Islands, their path being a parabolic curve of south-westerly direction. Only a small percentage, however, reach Australia, the majority recurving in their path before reaching New Caledonia.

Anemometrical records for these storms do not exist, but the fact that towns visited by them have been greatly damaged indicates that the velocity must be very great. Fortunately the area covered by these storms is very small when compared with the southern cyclones, and the region affected during an individual visitation is very limited. The heaviest blows are experienced to the west of the vortex with south-east to south-west winds.

(ii.) *Severe Cyclones.* Very severe cyclones, popularly known as "Willy Willies," are peculiar to the north-west coast of Western Australia from the months of December to March, inclusive. They apparently originate in the ocean, in the vicinity of the Cambridge Gulf, and travel in a south-westerly direction with continually increasing force, displaying their greatest energy near Cossack and Onslow, between latitudes 20° and 22° South. The winds in these storms, like those from the north-east tropics, are very violent and destructive, causing great havoc amongst the pearl-fishers. The greatest velocities are usually to be found in the south-eastern gradient of the cyclones, with north-east to east winds. After leaving the north-west coast, these storms either travel southwards, following the coast-line, or cross the continent to the great Australian Bight. When they take the latter course their track is marked by torrential rains, as much as 29·41 inches, for example, being recorded at Whin Creek from one such occurrence. Falls of 10 inches and over have frequently been recorded in the interior of Western Australia from similar storms.

Cyclones occasionally develop from incipient monsoonal low-pressures in the interior of the continent. Their formation is apparently materially assisted by the advancing high-pressures to the west of them, for they seldom or never appear without this accompaniment. The velocity and duration of the resultant gales, too, has a distinct relation to the magnitude of pressure in the anticyclones. Evidence of excess of high pressures on such occasions indicates severe gales in the cyclone, and in the case of moderate pressures, moderate gales.

These cyclones do not attain their severest phases until they reach the seaboard The most violent winds occur in the south-western quadrant, with south-west to south-east winds. The area affected on the coast line is not usually very great. During the visitation of one of these storms, about 500 miles in diameter, in July 1903, a strip of land, only 80 miles in extent, was affected. But so severe was the gale within this region that steamers of from 8000 to 10,000 tons, leaving Port Jackson, were buffeted and tossed about like corks by the turbulent sea. Notwithstanding this, vessels 200 miles to the east lay becalmed, and had no indication of the violent atmospheric upheaval relatively so near.

Though storms of this type may occur at any time of the year, they are more frequent during the months of August and September. The velocity of the wind has on one occasion reached the rate of 120 miles per hour.

(iii.) *Southerly Bursters.* The "Southerly Burster" is a characteristic feature of the eastern part of Australia. It is a cool, or cold, wind peculiar to the coastal districts of New South Wales, south of latitude 30°. In a modified form, however, it also appears in the interior of that State, in Victoria, and the western districts of Queensland.

The "Southerly Bursters" invariably follow periods of hot weather, and are a great relief to the population settled over the favoured areas. They occur in all months, from August to May inclusive, but most frequently in November. The preceding winds in the early and late summer months are from a north-westerly, and in the midsummer months from a north-easterly direction. A rise in the barometer always takes place before their advent, but no relation has been established between the time this rise begins and the moment of the arrival of the wind itself, neither is there any apparent connection between the velocity of the wind and the rate or gradient of the barometric rise, notwithstanding that records of nearly fifteen hundred "Bursters," extending over a period of 40 years, have been analysed with a view to ascertaining if such a connection could be established. All that can be said is that, should the rise be sharp and rapid, the life of the blow will be short, while a slow and gradual one indicates a long and steady blow from the south, after the initial "Burster" has passed. "Southerly Bursters" are usually first noted on the extreme south coast, and travel northward at a rate of 20 miles per hour. The rate of translation has ordinarily no definite relation to the velocity attained by the wind itself.

"Bursters" frequently occur simultaneously at several places along the seaboard, and occasionally they have been known to progress down the coast from north to south. While they may arrive at any time during the day or night, the interval between sundown and midnight is that in which they ordinarily occur.

This type of storm is usually associated with "V"-shaped depressions, but occasionally a condition of relatively high barometric pressures in Victoria will induce their occurrence. It is most frequent during seasons of sporadic rains, and very rare during good years in the interior. In the summer of 1890, the year of the great Darling River flood, only sixteen visitations occurred, and even these were of a very mild character. The series of good years in the interior of Australia, since 1903, has been remarkable for the small annual number of "southerly bursters."

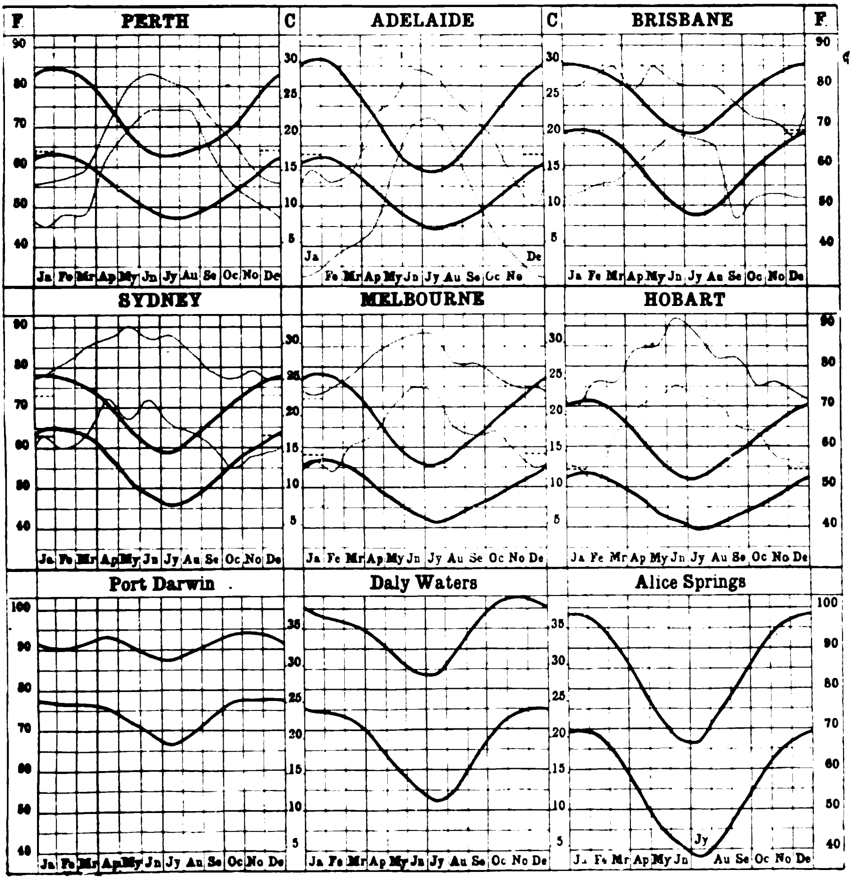
The greatest number ever experienced in a single summer is 62, the average being 32.

In the months of December and January they are usually short lived, and two may occur within the twenty-four hours. In the early and late summer months the intervening periods of warm weather are longer, and the winds are longer sustained, the energy being supplied from the more pronounced high pressures prevailing at these seasons of the year. The velocity varies from a rate of a few miles an hour to over 80 miles per hour, the maximum puffs occurring about an hour after the arrival of the burster. During recent years there has been a falling off both in their number and strength, the reason for which is not yet understood, but it is suspected that the gradual extension of the agricultural and pastoral industries to the interior of the country may be one of the causes of the change.

Winds of a like character, and possibly derived from similar atmospheric actions and conditions, are—

In Europe—"The Bora," a sharp, cold north-east wind, which blows from the Croatian and Illyrian Mountains along the coast of Dalmatia from Trieste southward; and the "Mistral," a violent northerly wind which blows from France to the Gulf of Lyons.

GRAPHS SHEWING ANNUAL FLUCTUATIONS OF MEAN MAXIMUM AND MINIMUM TEMPERATURE AND HUMIDITY IN SEVERAL PARTS OF THE COMMONWEALTH OF AUSTRALIA.



EXPLANATION OF THE GRAPHS OF TEMPERATURE AND HUMIDITY.—In the above graphs, in which the heavy lines denote 'temperature' and the thin lines 'humidity,' the fluctuations of mean temperature and mean humidity are shewn throughout the year. These curves are plotted from the data given in the Climatological Tables hereinafter. The temperatures are shewn in degrees Fahrenheit, the inner columns giving the corresponding values in centigrade degrees. Humidities have not been obtained for Port Darwin, Daly Waters, or Alice Springs.

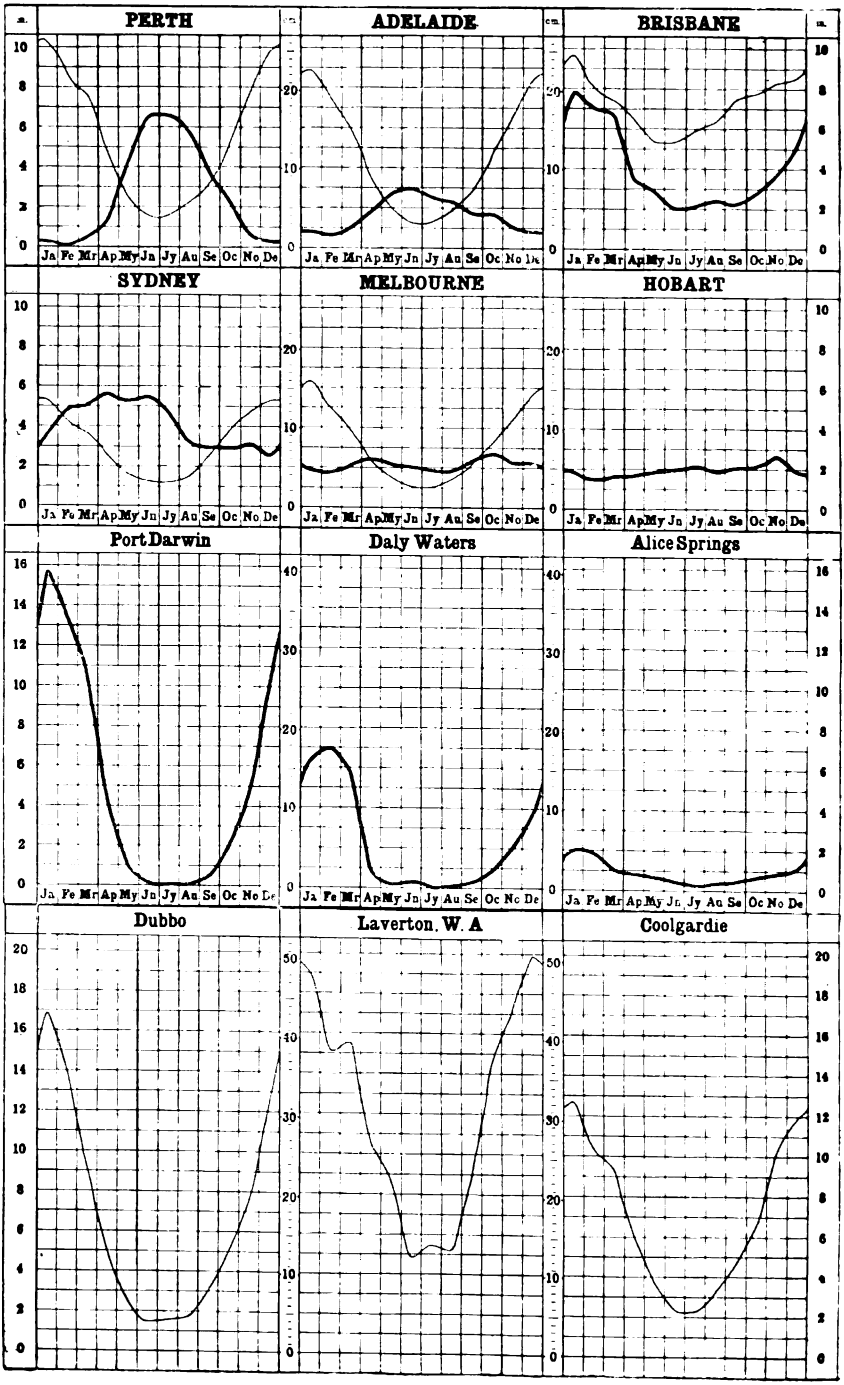
For the thin lines the degree numbers represent relative humidities, or the actual percentages of actual saturation on the total for the respective temperature.

In both cases the upper line represents the mean of the maximum, and the lower line the mean of the minimum results; thus the curves also shew the progression of the range between maximum and minimum temperatures throughout the year.

INTERPRETATION OF THE GRAPHS.—The curves denote mean monthly values. Thus, taking, for example, the temperature graphs for Perth, the mean readings of the maximum and minimum temperatures for a number of years on 1st January would give respectively about 83° Fahr. and 62° Fahr. Thus the mean range of temperature on that date is the difference, viz., 21°. Similarly, observations about 1st June would give respectively about 66° Fahr. and 51° Fahr., or a range of 15°.

In a similar manner it will be seen that the mean of the greatest humidities, say on 31st March, is about 64 and the mean of the least humidities 55; in other words, at Perth, the degree of saturation of the atmosphere by aqueous vapour ranges on 31st March between 64 % and 55 %.

GRAPHS SHEWING ANNUAL FLUCTUATIONS OF MEAN RAINFALL AND MEAN EVAPORATION IN SEVERAL PARTS OF THE COMMONWEALTH OF AUSTRALIA.

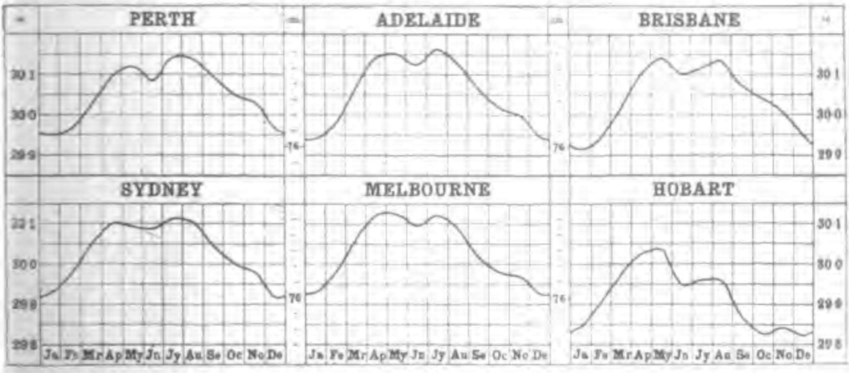


(For explanation see next page.)

Explanation of the Graphs of Rainfall and Evaporation.—On the preceding graphs thick lines denote rainfall and thin lines evaporation, and shew the fluctuation of the mean rate of fall *per month* throughout the year. The results, plotted from the Climatological Tables hereinafter, are shewn in inches (see the outer columns), and the corresponding metric scale (centimetres) is shewn in the two inner columns. The evaporation is not given for Hobart, Port Darwin, Daly Waters, or Alice Springs, and the rainfall is not given for Dubbo, Laverton, W.A., and Coolgardie.

Interpretation of the Graphs.—The distance for any date from the zero line to the curve represents the average number of inches, reckoned as per month, of rainfall at that date. Thus, taking the curves for Adelaide, on the 1st January the rain falls on the average at the rate of about four-fifths of an inch per month, or, say, at the rate of about 9½ inches per year. In the middle of June it falls at the rate of nearly 3 inches per month, or, say, at the rate of about 36 inches per year. At Dubbo the evaporation is at the rate of nearly 17 inches per month about the middle of January, and only about 1¼ inches at the middle of June.

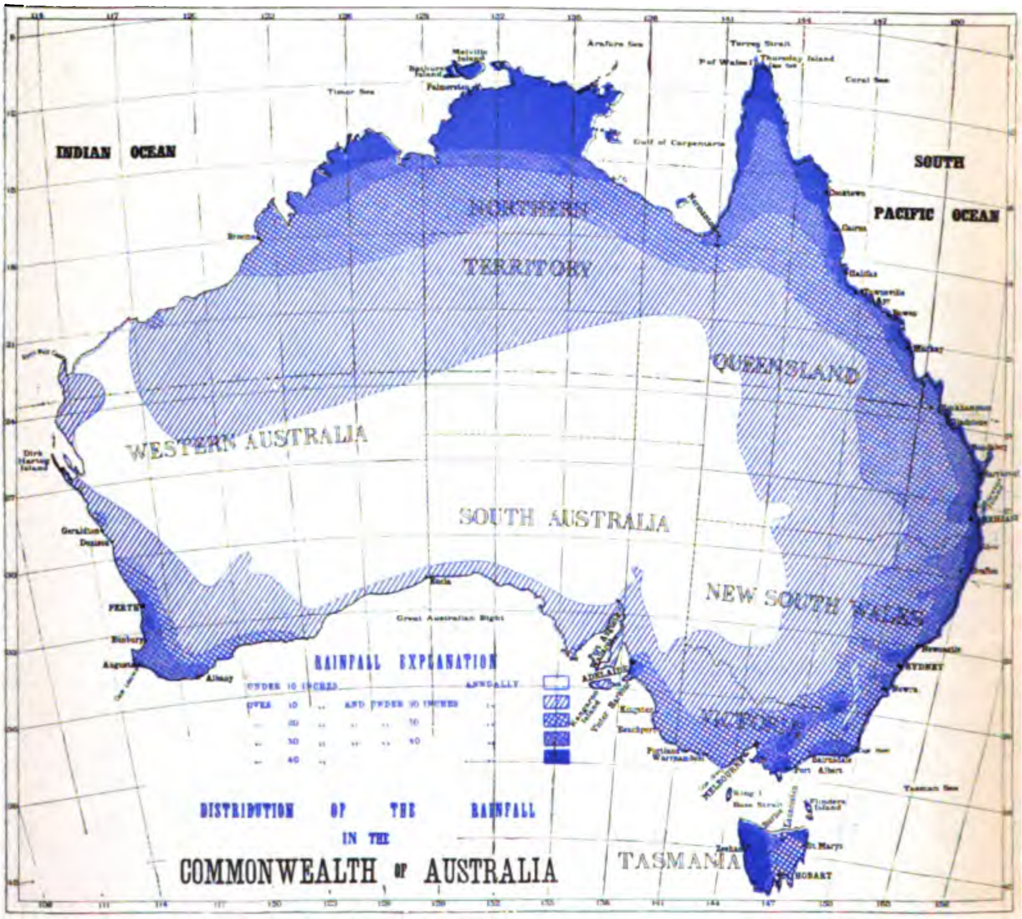
GRAPHS SHEWING ANNUAL FLUCTUATIONS OF MEAN BAROMETRIC PRESSURE FOR THE CAPITALS OF THE COMMONWEALTH OF AUSTRALIA.



Explanation of the Graphs of Barometric Pressure.—On the above graphs the lines representing the yearly fluctuation of barometric pressure at the capital cities are means for long periods, and are plotted from the Climatological Tables given hereinafter. The pressures are shewn in inches on about 2½ times the natural scale, but the corresponding pressures in centimetres are also shewn in the two inner columns, each division representing one millimetre.

Interpretation of the Barometric Graphs.—Taking the Brisbane graph for purposes of illustration, it will be seen that the mean pressure on 1st January is about 29.93 inches, and there are maxima in the middle of May and August of about 30.15 and 30.14 respectively. The double maxima appear clearly on each graph.

RAINFALL OF AUSTRALIA.



The above map has been prepared from a chart shewing the isohyets (curves of equal mean annual rainfall) for every 10 inches for Australia, supplied by the Commonwealth Meteorologist, and compiled from the most recent information. It was impracticable on the small scale map to distinguish between the areas with 40 to 50, 50 to 60, 60 to 70, and over 70 inches of rain annually.

In North America, the "Northers" of Texas have similar characteristics, and in South America "The Pampero," a cold and strong southerly wind which blows over the Pampas of Argentina, is almost identical with the "Southerly Bursters." The "Tehuantepec" winds that blow on the Pacific side of Central America are also very similar.

All parts of Australia are subject during the summer months to hot, desiccating winds, of two kinds. The most common and general class are associated with low-pressure isobars. The more rare and local hot winds are caused by the heating of descending air on the lee-side of mountains. In Victoria the former class are known as "Brick Fielders," a name originally applied to the "Southerly Bursters" in Sydney, because of the dust they raised from the brickfields to the south of the city. When the goldfields were discovered in Victoria the miners hailing from Sydney gave the name to the dusty winds from the opposite quarter.

The hot winds on the south-eastern littoral are analogous to the "Chinook" winds which blow at the eastern foot of the Rocky Mountains; to the "Fœhn" winds of the Alpine Valleys; and to the "North-Westers" of the Canterbury Plains in the Middle Island of New Zealand.

13. **Influences affecting Australian Climate.**—Australian history does not cover a sufficient period, nor is the country sufficiently occupied, to ascertain whether or not the advance of settlement has materially affected the climate as a whole. Local changes therein, however, have taken place, a fact which suggests that settlement and the treatment of the land have a distinct effect on local conditions. For example, the mean temperature of Sydney shews a rise of two-tenths of a degree during the last twenty years, a change probably brought about by the great growth of residential and manufacturing buildings within the city and in the surrounding suburbs during that period. Again, low-lying lands on the north coast of New South Wales, that originally were seldom subject to frosts, have with the denudation of forests from the surrounding hills experienced annual visitations, the probable explanation being that, through the absence of trees, the cold air of the high lands now flows, unchecked and untempered, down the sides of the hills to the valleys and lower lands.

It is pointed out by Abercromby,[1] as shewing the influence of irrigation on climate, that "Before the Suez Canal was made, the desert through which it is cut was said to be rainless; now since the Bitter Lakes have been filled up with water, rain falls on an average eight days in the year at Ismailia." And in the United States, General A. W. Greely[2] says, concerning "Heat Waves," "It seems possible that the frequency and intensity of such visitations have diminished on the Pacific coast, since Tennant's record of hot days (classing as such those on which the temperature rose to 80° or above, at San Francisco) indicates that their annual number has very materially diminished since 1859. For seven years prior to 1859 such days averaged thirteen yearly, and since that time, up to 1871, the average yearly number is but four. The immense quantity of land placed under irrigation and the vast increase in vegetation are obvious reasons why there should be some diminution in this respect."

(i.) *Influences of Forests on Climate.* As already indicated, forests doubtless exercise a great influence on local climate, and hence, to the extent that forestial undertakings will allow, the weather can be controlled by human agency. The direct action of forests is an equalising one; thus, especially in equatorial regions and during the warmest portion of the year, they considerably reduce the mean temperature of the air. They also reduce the diurnal extremes by their shade, by altering the extent of radiating surface, by evaporation, and by checking the movement of air. While decreasing evaporation from the ground, they increase the relative humidity. Vegetation greatly diminishes the rate of flow-off of rain, and the washing away of surface soil. Thus when a region is protected by trees, steadier water supply is ensured, and the rainfall is better conserved. In regions of snowfall the supply of water to rivers is similarly regulated, and without this and the sheltering influence of ravines and "gullies" water-courses supplied mainly by melting snow would be subject to alternate periods of flooding and dryness. This is borne out in the inland rivers. Thus the River Murray, which has never been known to run dry, derives its steadiness of flow mainly through the causes above indicated.

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[1] "Seas and Skies," Hon. Ralph Abercromby. 8vo, London, 1888, p. 30.

[2] "American Weather." 8vo, London, 1888, p. 253.

(ii.) *Direct Influences of Forest on Rainfall.* Whether forests have a direct influence on rainfall is a debatable question, some authorities alleging that precipitation is undoubtedly induced by forests, while others contend the opposite. According to Dr. Hann, observations have been made in India and Germany which support the idea that the destruction of trees has had a most deteriorating effect upon the climate.[1] In the Cordilleras clouds with rain falling from them can be seen hanging over forests, while over contiguous lands covered with shrubs or used for agriculture the sky is blue and the sun is shining.

In America the influence of forests on the rainfall is still debated, but in Europe authorities contend that forests encourage frequent rainfalls. Hann states that a surface which keeps the air moist and cool, and from which there is as great an evaporation as takes place from extended forests, must have a tendency to increase the amount and frequency of precipitation, as contrasted with an open country which is dry, but over which conditions are otherwise similar.

Obviously the settlement of this very important question is difficult. Observations would have to be taken, with different treatments of the land, over very extended periods. Sufficient evidence exists, however, to establish that, even if the rainfall has not increased, the beneficial effect of forest lands in temporising the effects of the climate is more than sufficient to disclose the importance of their protection and extension. Curtis, in a paper read before the Meteorological Congress of 1893, sets forth important evidence of the ill-effects on orchard and wheat country of the felling of trees for the timber trade.

In Michigan, where half a century ago peach trees flourished and were rarely injured by cold, the crops have now nearly disappeared, owing to the removal by timbermen of the shelter afforded by the forests. In Northern Kansas, too, from the same cause, the growing of peaches has been largely abandoned. Many of the South Californian citrus fruit-growers protect their orchards from the destructive effects of wind by the judicious planting of eucalyptus and other trees.

It is the rapid rate of evaporation (says Dr. Fernow), induced by both hot and cold winds, which injures crops and makes life uncomfortable on the plains. Whether the forest aids in increasing precipitation there may be doubt, but nobody can say that it does not check the winds and the rapid evaporation due to them.

Trees as wind-breaks have been successfully planted in central parts of the United States, and there is no reason why similar experiments should not be successful in many parts of our treeless interior. The belts should be planted at right angles to the direction of the prevailing parching winds, and if not more than half a mile apart will afford shelter to the enclosed areas.[2]

14. **Comparison of Rainfalls and Temperatures.**—For the purpose of comparison the following list of rainfalls and temperatures are given for various important cities throughout the world, for some of the places mentioned as possible sites for a federal capital, and for the capitals of the Australian States :—

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[1] "Climatology," p. 194.

[2] See A. Woeikof, Petermann's Mittheilungen, 1885; and W. M. Fulton and A. N. Salisbury, "Convention of U.S.A. Weather Bureau Officials, 1898."

TABLE SHEWING COMPARISON OF RAINFALLS AND TEMPERATURES OF CITIES OF THE WORLD WITH THOSE OF AUSTRALIA.

Place.	Height above M.S.L.	Annual Rainfall.			Temperature.						
		Average.	Highest.	Lowest.	Mean Summer.	Mean Winter.	Highest on Record.	Lowest on Record.	Average Hottest Month.	Average Coldest Month.
	Ft.	Ins.	Ins.	Ins.	Fahr.	Fahr.	Fahr.	Fahr.	Fahr.	Fahr.
Amsterdam	...	26.40	...	...	62.9	37.1	93.9	5.8	63.6	35.0
Athens	...	...	...	...	...	...	106.0	...	...	...
Berlin	161	22.80	27.18	17.97	64.6	32.4	97.5	— 9.6	65.8	30.6
Berne	1,880	46.00	...	...	...	...	97.2	—22.0	63.0	27.0
Bombay	37	75.00	...	...	83.0	75.0	100.0	53.0	83.0	74.0
Brussels	177	28.60	47.00	20.00	63.2	37.2	...	...	65.0	35.6
Budapest... ...	502	21.50	...	...	...	...	...	...	71.7	31.0
Buenos Ayres ...	72	35.20	78.74	22.76	75.4	51.4	103.1	28.4	75.0	50.0
Calcutta	21	65.60	...	...	84.7	66.7	108.0	44.0	85.0	65.0
Capetown ...	40	25.50	36.72	17.71	68.1	54.7	102.0	34.0	68.8	53.9
Chicago	595	33.40	45.80	24.40	70.0	26.0	103.0	23.0	72.0	24.0
Christiania ...	82	21.10	...	...	...	...	91.2	...	63.0	23.5
Colombo	40	87.36	...	...	81.0	79.5	95.8	65.2	82.5	79.0
Constantinople ...	...	28.75	42.74	14.78	74.0	43.5	103.6	13.0	75.7	42.0
Copenhagen ...	...	21.80	27.87	21.58	60.5	31.9	90.5	— 9.7	61.9	31.4
Dublin	155	29.20	35.57	20.47	58.9	42.0	87.0	13.0	63.5	32.8
Edinburgh ...	441	25.00	32.89	16.50	59.0	38.4	88.0	0.0	58.0	37.0
Genoa	177	45.00	...	...	...	...	...	...	...	...
Hong Kong ...	110	84.88	100.0	57.03	80.9	59.1	92.9	40.6	80.9	55.3
Johannesburg ...	5,925	30.64	43.39	21.66	65.0	51.5	94.0	23.3	66.8	40.6
Lisbon	312	31.00	102.0	27.50	69.6	51.3	94.1	32.5	90.6	...
London	154	24.36	34.08	16.93	61.2	39.3	97.1	4.0	62.7	38.6
Madras	22	49.00	...	...	87.3	76.7	112.0	57.0	89.3	76.1
Madrid	2,149	17.99	27.48	11.22	73.0	41.2	107.1	10.5	75.7	39.7
Marseilles ...	246	21.73	43.05	12.05	70.3	46.0	100.4	11.5	83.0	56.3
Moscow	469	21.30	...	...	63.5	49.0	...	...	68.0	12.0
Naples	187	32.60	...	...	76.1	49.3	104.0	23.0	77.2	48.2
New York ...	175	30.70	37.60	24.30	67.0	19.0	97.0	—28.0	69.0	16.0
Ottawa	294	33.19	38.05	25.25	66.7	15.0	98.3	31.6	68.7	12.6
Paris	104	19.68	26.18	15.28	63.0	38.4	101.1	—14.0	66.0	36.3
Pekin	...	24.40	...	...	...	...	...	...	79.2	23.6
Quebec	293	45 to 50	...	...	63.0	14.0	...	...	66.0	9.4
Rome	164	27.84	36.29	19.84	74.0	46.6	100.4	19.6	76.5	45.7
San Francisco ...	28	22.50	38.70	9.30	59.0	51.0	100.0	29.0	61.0	50.0
Shanghai ...	...	...	...	...	79.4	41.1	102.0	12.2	82.7	37.7
Singapore ...	...	92.70	123.24	65.56	...	...	93.0	...	...	...
Stockholm ...	144	15.70	...	...	...	...	...	...	63.0	24.5
St. Petersburg ...	16	20.86	25.11	15.74	61.0	19.0	87.4	—30.3	64.0	17.1
Tokyo	69	58.00	...	...	74.1	38.6	98.0	15.0	77.4	36.6
Vienna	666	25.82	37.60	20.04	65.3	30.9	101.7	—13.9	67.5	28.6
Vladivostock ..	100	12.60	...	...	...	...	...	...	69.5	5.0
Washington ...	73	43.10	61.30	30.60	75.0	35.0	104.0	—15.0	77.0	33.0

PLACES WHICH HAVE BEEN REFERRED TO AS POSSIBLE SITES FOR THE FEDERAL CAPITAL.

Place.	Height above M.S.L.	Average.	Highest.	Lowest.	Mean Summer.	Mean Winter.	Highest on Record.	Lowest on Record.	Average Hottest Month.	Average Coldest Month.
Armidale... ...	3,333	31.85	59.34	16.61	67.7	44.4	105.2	13.9	69.1	42.1
Bombala... ...	3,000	23.18	38.18	11.88	66.1	43.6	104.1	15.5	65.2	41.3
Canberra (District) ...	(2,000 to 2,900)	23.00	50.60	16.56	69.7	45.0	109.0	16.0	72.0	42.0
Dalgety	2,650	27.18	38.83	11.88	63.3	42.2	104.0	11.0	67.0	40.0
Lyndhurst ...	2,204	24.66	28.35	19.05	...	...	...	...	...	...
Tumut	900	32.33	47.87	16.83	...	...	...	...	...	...

THE STATE CAPITALS.

Place.	Height above M.S.L.	Average.	Highest.	Lowest.	Mean Summer.	Mean Winter.	Highest on Record.	Lowest on Record.	Average Hottest Month.	Average Coldest Month.
Adelaide	141	20.38	30.87	13.43	72.3	52.0	116.3	32.2	73.3	52.5
Brisbane	137	50.00	88.23	24.11	76.0	60.0	108.9	36.1	77.3	58.0
Hobart	160	23.40	40.67	13.43	61.4	47.0	105.0	27.7	62.1	45.7
Melbourne ...	91	25.62	44.25	15.61	64.9	49.2	111.2	27.0	66.3	47.7
Perth	197	33.05	46.73	20.48	73.9	55.6	112.0	33.6	75.1	54.6
Sydney	144	49.35	82.81	23.01	70.8	53.9	108.5	35.9	71.5	52.3

15. **Climatological Tables.**—The means, averages, extremes, totals, etc., for a number of climatological elements have been determined from long series of observations at the Australian capitals. These are given in the following tables:—

CLIMATOLOGICAL DATA FOR PERTH, W.A.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

Month.	Barometer corrected to 32° F. and Mean Sea Level from 9 a.m. & 3 p.m. Readings.	Wind.				Mean Amount of Evaporation.	No. of Days Lightning.	Mean Amount of Clouds.	No. of Clear Days.
		Greatest Number of Miles in one day.	Mean Pressure.	Total Miles.	Prevailing Direction.				
No. of yrs. over which observation extends.	10	9	9	9	9	9	10	10	10
January	29.950	797 27/98	0.74	11,687	S	10.41	1.1	2.4	14.9
February	29.961	606 10/05	0.68	10,108	S	8.61	0.9	2.9	12.2
March	30.027	601 17/99	0.56	10,168	S S E	7.59	0.9	3.0	13.2
April	30.095	955 25/1900	0.44	8,760	S S E	4.72	0.9	4.4	7.2
May	30.121	698 5/05	0.36	8,184	E N E	2.52	2.4	5.3	5.3
June	30.081	836 21/1900	0.41	8,400	N N E	1.60	1.4	6.0	3.2
July	30.144	949 11/99	0.41	8,680	N N E	1.64	2.0	5.3	6.4
August	30.140	966 15/03	0.44	8,990	S S E	2.34	1.6	5.1	6.0
September	30.092	864 11/05	0.49	9,180	S S W	3.26	1.8	5.4	4.4
October	30.050	686 15/98	0.60	10,509	S S W	5.29	1.3	5.4	5.1
November	30.033	777 18/97	0.65	10,590	S	7.81	1.0	3.8	8.9
December	29.966	672 31/98	0.71	11,439	S	9.91	1.7	3.1	12.1
Year Totals ...	—	—	—	—	-	65.70	17 0	52.1	98.9
Year Averages ...	30.055	—	0.53	9,725	S	—	—	—	—
Year Extremes ...	—	966 15/8/03	—	—	-	—	—	—	—

TEMPERATURE.

Month.	Mean Temperature.			Extreme Shade Temperature.		Greatest Range.	Extreme Temperature.		Sea water mn. 3 ft. below surface.
	Mean Max.	Mean Min.	Mean	Highest.	Lowest.		Highest in Sun.	Lowest on Grass.	
No. years over which observation extends.	10	10	10	10	10	10	9	9	—
January	84.0	62.9	73.5	107.0 16/97	50.6 25/01	56.4	171.1 4/04	42.4 25/02	-
February	84.2	62.9	73.6	106.8 6/98	47.7 1/02	59.1	169.0 4/99	41.2 1/02	—
March	81.6	60.5	71.1	104.3 6,7/06	45.8 8/08	58.5	161.6 1/99	36.7 8/08	—
April	75.8	56.6	66.2	98.0 5/06	42.4 2/01	55.6	152.0 11/01	35.0 2/08	—
May	68.6	52.6	60.6	84.0 7/06	39.9 17,18/99	44.1	138.8 15/02	31.9 18/99	—
June	63.7	49.3	56.5	73.2 16/99	36.9 14/98	36.3	131.0 5/04	30.2 14/98	—
July	62.6	47.4	55.0	73.8 24/99	36.4 19/06	37.4	131.0 31/98	30.7 6/99	-
August	63.9	47.8	55.9	80.4 30/02	37.5 11/97	42.9	134.1 *	30.6 13/05	-
September	65.6	50.0	57.8	86.4 28/1900	39.0 18/1900	47.4	144.8 19/02	33.2 15/99	-
October	69.3	53.2	61.3	93.4 17/06	41.2 10/03	52.2	152.6 30/01	34.6 6/98	
November	74.9	56.4	66.7	100.9 27/01	42.0 1/04	58.9	161.5 17/03	36.9 1/04	-
December	80.7	60.7	70.7	107.9 20/04	49.2 1/97	58.7	168.3 20/04	42.0 5/02	-
Year Averages ...	72.9	55.0	64.0	—	-	—	—	—	-
Year Extremes ...	—	—	—	107.9 20/12/04	36.4 19/7/06	71.5	171.1 4/1/04	30.2 14/6/98	-

HUMIDITY, RAINFALL, AND DEW.

Month.	Humidity.			Rainfall.					Dew.	
	Mean 9 a.m.	Highest Mean.	Lowest Mean	Mean Monthly.	Mean No. of Days Rain.	Greatest Monthly.	Least Monthly.	Greatest in One Day.	Mean Amount of Dew.	Mean No. days Dew
No. of yrs. over which observation extends	10	10	10	10	10	10	10	10	—	10
January	51	56	45	0.31	2	1.24 1900	nil 1897	0.71	—	1.6
February	53	57	48	0.15	3	0.42 1906	nil 1903	0.20	—	1.5
March	54	59	48	0.57	4	1.59 1901	0.08 1902	1.37	—	2.9
April	63	70	62	1.46	7	3.26 1899	0.22 1902	2.62	—	7.5
May	74	80	69	4.38	14	8.71 1905	0.98 1903	2.08	—	9.8
June	78	83	74	6.56	17	11.19 1900	3.66 1902	1.78	—	10.1
July	79	81	74	6.63	16	10.90 1902	4.39 1897	2.29	—	11.6
August	76	79	74	5.78	16	9.25 1903	0.46 1902	2.79	—	9.7
September	69	72	64	3.75	15	7.72 1903	1.93 1899	1.17	—	6.1
October	62	67	56	2.31	13	4.18 1899	0.86 1897	1.26	—	3.4
November	56	60	52	0.63	6	1.30 1903	0.11 1902	1.11	—	3.1
December	52	56	49	0.35	4	0.77 1905	0.04 1906	0.58	—	1.9
Year Totals ...	—	-	—	32.88	117		—	--	—	69.2
Year Averages ...	63	—	—	—	—	—	—	—	—	—
Year Extremes ...	—	83	45	—	—	11.19 6/1900	nil 1/97, 2/03	2.79 7/8/1903	—	-

— Signifies no record kept. * 29/1898 and 18/1902.

CLIMATOLOGICAL DATA FOR ADELAIDE, S.A.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

Month.	Barometer corrected to 32° F. and Mean Sea Level from 9 a.m. & 3 p.m. Readings.	Wind.				Mean Amount of Evaporation.	No. of Days Lightning.	Mean Amount of Clouds.	No. of Clear Days.
		Greatest Number of Miles in one day.	Mean Pressure.	Total Miles.	Prevailing Direction.				
No. of yrs. over which observation extends.	50	29	29	29	29	37	35	39	25
January	29.939	758 19/99	0.38	8,339	S W & S	8.95	2.3	3.6	7.2
February	29.978	691 22/96	0.32	7,324	S W & S	7.39	2.1	3.4	7.1
March	30.069	592 12/85	0.26	6,956	S W to S E	5.91	2.3	3.9	6.8
April	30.144	773 10/96	0.24	6,426	S W & S †	3.44	1.6	5.0	3.8
May	30.151	760 9/80	0.22	6,318	N E to N	2.04	1.9	5.7	1.6
June	30.123	750 12/78	0.27	6,876	N E to N	1.25	2.3	6.2	1.1
July	30.165	674 25/82	0.24	6,950	N E to N	1.33	1.5	5.8	1.4
August	30.130	773 31/97	0.294	7,378	N E to N ‡	1.89	2.2	5.7	2.0
September	30.067	720 2/87	0.33	7,551	N E & S W ‖	2.87	2.4	5.2	2.4
October	30.020	768 28/98	0.37	8,296	S W & N E ‖	4.79	3.6	4.9	3.6
November	30.002	677 2/04	0.36	7,962	W S W to S	6.61	3.9	4.5	5.5
December	29.948	675 12/91	0.38	8,327	W S W to S	8.50	2.9	3.8	7.0
Year Totals ...	—	—	—	—	—	54.97	29.0	—	49.5
Year Averages ...	30.061	—	0.030	7,392	S W	—	—	4.8	—
Year Extremes ...	—	773 *	—	—	—	—	—	—	—

*10/4/96; 31/8/97. †With tendency N E. ‡With tendency S W. ‖ equal.

TEMPERATURE.

Month.	Mean Temperature.			Extreme Shade Temperature.		Greatest Range.	Extreme Temperature.		Sea water mn. 3 ft. below surface.
	Mean Max.	Mean Min.	Mean	Highest.	Lowest.		Highest in Sun.	Lowest on Grass.	
No. years over which observation extends.	50	50	—	50	50	50	29	46	33
January	86.5	61.7	—	116.3 26/58	45.1 21/84	71.2	180.0 18/82	36.5 14/79	70.9
February	86.0	61.9	—	113.6 12/99	46.4 13/05	67.2	170.5 10/00	36.7 24/78	70.8
March	81.1	59.0	—	108.0 12/61	44.8 —/57	63.2	174.0 17/83	33.8 27/80	68.3
April	73.4	54.8	—	98.0 10/66	39.6 15/59	58.4	155.0 1/83	30.5 14/79	64.0
May	65.3	50.0	—	88.3 5/66	36.9 *	51.4	148.2 12/79	25.9 10/91	58.9
June	60.2	46.7	—	76.0 23/65	32.5 27/76	43.5	138.8 18/79	24.5 20/79	54.7
July	58.7	44.4	—	74.0 11/06	32.2 11/03	41.8	134.5 26/90	25.0 17/90	52.2
August	61.9	45.7	—	82.0 25/62	32.3 17/59	49.7	140.0 31/92	23.5 7/88	52.7
September	66.3	47.7	—	90.7 23/82	32.7 4/58	58.0	160.5 23/82	28.0 6/78	56.5
October	72.6	51.4	—	100.5 30/59	36.0 —/57	64.5	158.8 19/82	28.5 7/96	60.7
November	78.8	55.3	—	113.5 21/65	40.9 6/67	72.6	166.9 20/78	31.8 10/77	65.2
December	83.7	59.0	—	114.2 14/76	43.0 †	71.2	175.7 7/99	32.5 4/84	68.8
Year Averages ...	72.9	53.1	—	—	—	—	—	—	62.0
Year Extremes ...	—	—	—	116.3 26/1/58	32.2 11/7/03	84.1	180.0 18/1/82	23.5 7/8/88	—

* 26/1895; 24/1904. † 16/1861; 4/1906.

HUMIDITY, RAINFALL, AND DEW.

Month	Humidity.			Rainfall.					Dew.	
	Mean 9 a.m.	Highest Mean.	Lowest Mean	Mean Monthly.	Mean No. of Days Rain.	Greatest Monthly.	Least Monthly.	Greatest in One Day.	Mean Amount of Dew.	Mean No. days Dew
No. of yrs. over which observation extends	39	39	39	50	50	50	50	50	—	35
January	42	59	33	0.85	5	3.28 1870	nil 1878,1906	2.30	—	3
February	44	56	37	0.60	4	3.10 1858	nil 1860	1.81	—	4
March	49	58	40	1.07	6	4.60 1878	nil 1859	3.50	—	9
April	58	72	44	1.85	10	5.65 1889	0.086 1888	3.15	—	13
May	70	76	58	2.75	14	7.75 1875	0.196 1891	2.47	—	15
June	78	84	70	2.99	17	6.02 1887	0.423 1886	1.45	—	15
July	78	83	72	2.57	17	5.38 1865	0.365 1899	1.75	—	16
August	72	77	65	2.34	16	4.48 1864	0.675 1860	1.44	—	16
September	63	72	54	1.74	14	3.67 1877	0.448 1896	1.42	—	14
October	54	67	44	1.75	12	3.83 1870	0.306 1888	1.46	—	11
November	47	57	38	1.02	7	2.57 1903	0.039 1885	1.88	—	6
December	43	60	33	0.85	6	3.98 1861	nil 1904	1.32	—	3
Year Totals ...	—	—	—	20.38	128	—	—	—	—	125
Year Averages ...	56	—	—	—	—	—	—	—	—	—
Year Extremes ...	—	84	33	—	—	77.5 5/1875	nil *	3.50	—	—

— Signifies no record kept. * Jan. and Dec., Feb., Mar., various years.

CLIMATOLOGICAL DATA FOR BRISBANE, QUEENSLAND.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

Month.	Barometer corrected to 32° F. and Mean Sea Level from 9 a.m. & 3 p.m. Readings.	Wind.				Mean Amount of Evaporation.	No. of Days Lightning.	Mean Amount of Clouds.	No. of Clear Days.
		Greatest Number of Miles in one day.	Mean Pressure.	Total Miles.	Prevailing Direction.				
No. of yrs. over which observation extends.	20	—	—	—	20	4	—	20	—
January	29.915	—	—	—	S E & N E	9.73	—	5.8	—
February	29.943	—	—	—	S & E	8.12	—	5.9	
March	30.014	—	—	—	S & E	7.41	—	5.6	
April	30.101	—	—	—	S & S E	6.51	—	4.8	—
May	30.147	—	—	—	S'ly & W'ly	5.34	—	4.7	
June	30.106	—	—	—	S'ly & W'ly	5.33	—	3.8	—
July	30.118	—	—	—	S & W	5.91	—	3.5	—
August	30.139	—	—	—	S & W	6.31	—	3.6	—
September	30.077	—	—	—	S'ly	7.43	—	3.7	—
October	30.044	—	—	—	N & E	7.72	—	4.2	
November	30.010	—	—	—	*	8.27	—	4.8	—
December	29.950	—	—	—	*	8.56	—	5.3	
Year Totals ...	—	—	—	—	—	86.64	—	—	
Year Averages ...	30.047	—	—	—	S'ly & E'ly	—	—	4.6	
Year Extremes ...	—	—	—	—	—	—	—	—	—

* N'ly, E'ly & S'ly.

TEMPERATURE.

Month.	Mean Temperature.			Extreme Shade Temperature.				Greatest Range.	Extreme Temperature.				Sea water mn. 3 ft. below surface.
	Mean Max.	Mean Min.	Mean	Highest.		Lowest.			Highest in Sun.		Lowest on Grass.		
No. of yrs. over which observation extends.	20	20	20	20		20		20	20		20		—
January	85.5	69.0	77.3	108.9	14/02	58.8	4/93	50.1	162.7	20/89	49.9	4/93	—
February	84.3	68.6	76.5	101.9	11/04	58.7	†	43.2	158.1	10/88	49.3	9/89	—
March	82.1	66.5	74.3	96.8	16/88	55.6	30/95	41.2	160.0	1/87	46.0	28/02	—
April	78.5	61.5	70.0	95.2	*	48.6	17/00	46.6	148.7	2/87	37.0	17/00	
May	73.1	55.2	64.2	88.8	18/97	41.3	24/89	47.5	140.8	4/88	29.8	8/97	
June	69.2	50.4	59.8	81.5	6/06	38.5	16/96	43.0	133.9	6/06	25.4	23/88	
July	68.1	47.8	58.0	83.4	28/98	36.1	‡	47.3	134.4	29/89	23.9	11/90	
August	71.1	49.8	60.5	86.2	28/95	37.4	6/87	48.8	140.7	30/88	27.1	9/99	—
September	75.4	54.6	65.0	90.2	20/04	40.7	1/06	49.5	155.5	26/03	30.4	1/89	
October	79.8	59.8	69.8	101.4	18/93	43.3	3/99	58.1	156.5	31/89	34.9	8/89	—
November	82.8	63.7	73.3	105.4	13/98	48.5	2/05	56.9	162.3	7/89	38.8	1/05	—
December	85.0	67.2	76.1	105.9	26/93	57.0	16/90	48.9	159.5	23/89	49.1	3/94	—
Year Averages ...	77.9	59.5	68.7	—		—		—	—		—		—
Year Extremes ...	—	—	—	108.9	14/1/02	36.1	§	72.8	162.7	20/1/89	23.9	11/7/90	—

* 9/1896 and 5/1903. † 10 and 11/1904. ‡ 12/1894 and 2/1896. § 12/7/1894 and 2/7/1896.

HUMIDITY, RAINFALL, AND DEW.

Month.	Humidity.			Rainfall.									Dew.	
	Mean. 9 a.m.	Highest Mean.	Lowest Mean.	Mean Monthly.	Mean No. of Days Rain.	Greatest Monthly.		Least Monthly.		Greatest in One Day.			Mean Amount of Dew.	Mean No. days Dew.
No. of yrs. over which observation extends	20	20	20	20	20	20		20		20			—	—
January	65.5	79	53	7.86	14	27.72	1895	1.23	1889	18.31	21/87		—	—
February	68.6	82	55	7.12	14	40.39	1893	0.77	1904	8.36	16/93		—	—
March	71.8	85	56	6.76	17	21.36	1890	0.63	1903	6.77	18/92		—	—
April	72.1	79	60	3.43	12	14.26	1892	0.05	1897	3.93	20/92		—	—
May	74.9	85	64	2.88	11	11.82	1903	0.47	1902	4.26	31/03		—	—
June	73.5	81	68	2.03	7	11.03	1893	0.02	1895	6.01	9/93		—	—
July	72.9	80	67	2.33	8	8.46	1889	0.04	1894	3.54	16/89		—	—
August	70.7	80	65	2.43	8	11.80	1887	0.24	1896	4.89	12/87		—	—
September	65.2	76	47	2.27	9	4.80	1890	0.50	1896	2.46	2/94		—	—
October	61.8	72	52	2.78	10	6.26	1892	0.14	1900	1.95	20/89		—	—
November	59.2	71	53	3.63	11	8.78	1889	1.07	1906	2.57	17/95		—	—
December	61.5	67	52	5.03	12	11.52	1895	0.55	1900	5.26	7/05		—	—
Year Totals ...	—	—	—	48.55	133	—		—		—			—	—
Year Averages ...	68.1	—	—	—	—	—		—		—			—	—
Year Extremes ...	—	85	47	—	—	40.39	2/1893	0.02	6/1895	18.31	21/1887		—	—

— Signifies no record kept.

CLIMATOLOGICAL DATA FOR SYDNEY, N.S.W.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

Month.	Barometer corrected to 32° F. and Mean Sea Level from 9 a.m. & 3 p.m. Readings.	Wind.				Mean Amount of Evaporation.	No. of Days Lightning.	Mean Amount of Clouds.	No. of Clear Days.
		Greatest Number of Miles in one day.	Mean Pressure.	Total Miles.	Prevailing Direction.				
No. of yrs. over which observation extends.	46	46	46	46	46	46	46	46	46
January	29.929	721 1/71	0.35	8,010	N E	5.30	4.7	5.1	1.7
February	29.973	871 12/69	0.27	6,447	N E	4.22	3.5	5.4	1.2
March	30.054	943 20/70	0.23	6,473	N E	3.60	5.0	5.0	2.4
April	30.103	803 6/82	0.20	5,896	N E	2.49	4.5	4.6	2.5
May	30.091	758 6/98	0.20	6,046	W	1.58	3.6	4.3	3.3
June	30.089	712 7/00	0.28	6,893	W	1.26	2.7	4.7	2.7
July	30.115	930 17/79	0.26	6,978	W	1.20	1.9	4.1	3.5
August	30.103	756 22/72	0.24	6,678	W	1.50	3.2	4.4	3.7
September	30.045	964 6/74	0.27	6,844	W	2.50	4.8	4.3	3.0
October	30.001	926 4/72	0.29	7,284	N E	3.81	5.4	4.6	1.9
November	29.981	720 13/68	0.32	7,426	N E	4.68	6.4	5.2	1.0
December	29.918	938 3/84	0.32	7,629	N E	5.28	7.1	5.5	1.5
Year Totals ...	—	—	—	—	—	37.42	52.8	57.2	28.4
Year Averages ...	30.034	—	0.27	6,884	N E	—	—	—	—
Year Extremes ...	—	964 6/9/74	—	—	—	—	—	—	—

TEMPERATURE.

Month.	Mean Temperature.			Extreme Shade Temperature.		Greatest Range.	Extreme Temperature.		Sea water mn. 3 ft. below surface.
	Mean Max.	Mean Min.	Mean	Highest.	Lowest.		Highest in Sun.	Lowest on Grass.	
No. of yrs. over which observation extends.	46	46	46	49	49	49	46	46	46
January	78.2	64.8	71.5	108.5 13/96	51.2 14/65	57.3	160.9 13/96	44.2 18/97	71.4
February	77.2	64.8	71.0	101.0 19/66	49.3 28/63	51.7	173.3 11/89	43.4 25/91	71.8
March	75.4	63.1	69.3	102.6 3/69	48.8 14/86	53.8	172.3 4/89	42.3 13/93	70.9
April	70.8	58.2	64.5	88.9 3/87	44.6 27/64	44.3	144.1 10/77	38.0 13/92	68.3
May	64.8	52.0	58.4	83.5 1/59	40.2 22/59	43.3	129.7 1/96	30.9 7/88	64.2
June	60.4	48.2	54.3	74.7 24/72	38.1 29/62	36.6	123.0 14/78	28.7 30/95	59.9
July	58.9	45.7	52.3	74.9 17/71	35.9 12/90	39.0	144.3 15/98	24.0 4/93	57.3
August	62.2	47.5	54.9	82.0 31/84	36.8 3/72	45.2	149.0 30/78	27.7 30/95	57.5
September	66.3	51.4	58.9	89.8 22/98	40.8 18/64	49.0	142.2 12/78	31.1 1/95	60.3
October	71.0	55.9	63.5	99.7 19/98	43.3 2/99	56.4	149.9 13/96	33.0 2/99	63.3
November	74.2	59.6	66.9	102.7 21/78	46.2 27/64	56.5	158.5 28/99	39.8 16/61	66.7
December	77.1	62.8	70.0	107.5 31/04	49.3 2/59	58.2	171.5 4/88	42.2 8/75	69.4
Year Averages ...	69.7	56.2	63.0	—	—	—	—	—	—
Year Extremes ...	—	—	—	108.5 13/1/96	35.9 12/7/90	72.6	173.3 11/2/89	24.0 4/7/93	—

HUMIDITY, RAINFALL, AND DEW.

Month.	Humidity.			Rainfall.					Dew.	
	Mean 9 a.m.	Highest Mean.	Lowest Mean	Mean Monthly.	Mean No. of Days Rain.	Greatest Monthly.	Least Monthly.	Greatest in One Day.	Mean Amount of Dew.	Mean No. days Dew
No. of yrs. over which observation extends	46	46	46	46	46	46	46	46	46	46
January	71	78	63	3.56	14.2	10.49 1883	0.42 1888	3.75 22/63	0.002	1.1
February	73	81	60	4.88	13.9	18.56 1873	0.34 1902	8.90 25/73	0.003	1.4
March	76	85	63	5.09	14.9	18.70 1870	0.42 1876	5.66 25/90	0.007	2.9
April	78	87	72	5.63	13.5	24.49 1861	0.06 1868	7.52 29/60	0.022	6.3
May	76	90	67	5.21	15.8	20.87 1889	0.21 1885	8.36 28/89	0.030	7.3
June	79	87	72	5.49	12.7	16.30 1885	0.19 1904	5.17 16/84	0.022	5.3
July	77	88	66	4.74	12.5	13.21 1900	0.12 1862	4.77 9/04	0.024	6.8
August	74	84	64	3.22	11.6	14.89 1889	0.04 1885	5.33 2/60	0.021	5.7
September	70	79	61	2.97	12.3	14.05 1879	0.08 1862	5.69 10/79	0.008	3.4
October	69	77	55	2.97	12.9	10.81 1902	0.21 1867	6.37 13/02	0.004	1.6
November	69	79	58	3.10	12.6	9.88 1865	0.20 1867	4.23 19/1900	0.006	2.7
December	69	77	59	2.50	12.9	7.80 1870	0.45 1876	2.75 1/88	0.002	1.0
Year Totals ...	—	—	—	49.36	159.8	-	—	- -	0.151	45.5
Year Averages ...	73	90	55	—	—	—	-	-	—	—
Year Extremes ...	—	—	—	—	—	24.49 4/1861	0.04 8/1885	8.90 25/2/73	—	—

CLIMATOLOGICAL DATA FOR MELBOURNE, VICTORIA.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

Month.	Barometer corrected to 32° F. and Mean Sea Level from 9 a.m. & 3 p.m. Readings.	Wind.				Mean Amount of Evaporation.	No. of Days Lightning.	Mean Amount of Clouds.	No. of Clear Days.
		Greatest Number of Miles in one day.	Mean Pressure.	Total Miles.	Prevailing Direction.				
No. of yrs. over which observation extends.	49	41	41	41	41	35	—	49	—
January	29.929	583 10/97	0.30	7,412	S W, S E	6.34	—	5.2	—
February	29.979	566 8/68	0.28	6,488	S W, S E	4.97	—	5.2	—
March	30.061	677 9/81	0.22	6,409	S W, S E	3.84	—	5.5	—
April	30.122	597 7/68	0.19	5,750	S W, S E, N W	2.28	—	5.8	—
May	30.124	693 12/65	0.19	5,993	N W, N E, S W	1.49	—	6.5	—
June	30.004	761 13/76	0 24	6,531	N W, N E	1.12	—	6.7	—
July	30.120	755 8/74	0.23	6,539	N W, N E	1.08	—	6.3	—
August	30.087	637 14/75	0.26	6,906	N W, N E, S W	1.50	—	6.3	—
September	30.017	617 11/72	0.29	7,102	N W, S W, N E	2.27	—	6.1	—
October	29.980	899 15/66	0.30	7,412	S W, N W	3.25	—	6.0	—
November	29.971	734 13/66	0.29	7,144	S W, S E	4.47	—	5.9	—
December	29.929	655 1/75	0.31	7,540	S W, S E	5.72	—	5.5	—
Year Totals	—	—	—	81,227	—	38.33	—	—	—
Year Averages	30.034	—	0.26	—	S W, N W	—	—	5.8	—
Year Extremes	—	899 15/10/66	—	—	—	—	—	—	—

TEMPERATURE.

Month.	Mean Temperature.			Extreme Shade Temperature.		Greatest Range.	Extreme Temperature.		Sea water mn. 3 ft. below surface.
	Mean Max.	Mean Min.	Mean	Highest.	Lowest.		Highest in Sun.	Lowest on Grass.	
No. of yrs. over which observation extends.	51	51	51	51	51	51	47	46	—
January	78.2	56.5	67.4	111.2 14/62	42.0 28/85	69.2	178.5 14/62	30.2 28/85	—
February	77.7	56.6	67.2	109.5 7/01	40.3 9/65	69.2	167.5 15/70	30.9 6/91	—
March	74.6	54.5	64,6	105.5 2/93	37.1 17/84	68.4	164.5 1/68	28.9 †	—
April	68.7	50.7	59.7	94.0 6/65	34.8 24/88	59.2	152.0 8/61	25.0 23/97	—
May	61.4	46.6	54.0	83.7 7/05	31.3 26/95	52.4	142.6 2/59	23.2 21/97	—
June	56.9	44.0	50.5	68.1 *	28.0 11/66	40.1	129.0 11/61	20.4 17/95	—
July	55.8	41.5	48.7	68.4 24/78	27.0 21/69	41.4	125.8 27/80	20.5 12/03	—
August	58.8	43.1	51.0	77.0 20/85	28.3 11/63	48.7	137.4 29/69	21.3 14/02	—
September	62.5	45.3	53.9	81.8 30/93	32.0 18/05	49.8	142.1 20/77	25.0 18/05	—
October	67.0	48.1	57.6	96.1 30/85	32.1 3/71	64.0	154.3 28/68	25.9 3/71	—
November	71.2	50.9	61.1	105.7 27/94	36.5 2/96	69.2	159.6 29/65	24.6 2/96	—
December	75.4	53.7	64.6	110.7 15/76	40.0 4/70	70.7	170.3 20/69	33.2 1/04	—
Year Averages	67.3	49.3	58.3	—	—	—	—	—	—
Year Extremes	—	—	—	111.2 14/1/62	27.0 21/7/69	84.2	178.5 14/1/62	20.4 17/6/95	—

* 21/1865 and 2/1884. † 17/84 and 20/1897.

HUMIDITY, RAINFALL, AND DEW.

Month.	*Humidity.			Rainfall.					Dew.	
	Mean.	Highest Mean.	Lowest Mean	Mean Monthly.	Mean No. of Days Rain.	Greatest Monthly.	Least Monthly.	Greatest in One Day.	Mean Amount of Dew.	Mean No. days Dew
No. of yrs. over which observation extends	49	49	49	51	51	67	67	48	—	—
January	64	73	57	1.92	7	6.83 1844	0.04 1878	2.97	—	—
February	65	75	54	1.76	7	6.78 1841	0.03 1870	2.14	—	—
March	68	78	61	2 14	8	6.36 1874	0.16 1842	3.05	—	—
April	73	83	63	2.42	10	6.71 1901	0.57 †	4.50	—	—
May	79	86	70	2.14	12	6.94 1848	0.45 1901	1.85	—	—
June	80	88	75	2.07	13	5.22 1851	0.60 1840	1.74	—	—
July	80	88	74	1.84	15	7.02 1891	0.49 1840	2.71	—	—
August	75	81	65	1.81	13	7.62 1849	0.48 1903	1.87	—	—
September	72	81	63	2.35	14	5.87 1870	0 61 1881	2.62	—	—
October	71	78	64	2.71	13	7.61 1869	0.28 1850	3.00	—	—
November	67	75	59	2.26	10	12.13 1849	0.25 1895	2.57	—	—
December	65	75	55	2.21	9	7.18 1863	0.11 1904	2.36	—	—
Year Totals	—	—	—	25.63	131	—	—	—	—	—
Year Averages	72	76	67	—	—	—	—	—	—	—
Year Extremes	—	—	—	—	—	12.13 11/1849	0.03 2/1870	4.50	—	—

— Signifies no record. * Mean of 9 a.m., 3 p.m., and 9 p.m. readings taken. † 1866 and 1902.

CLIMATOLOGICAL DATA FOR HOBART, TASMANIA.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

Month.	Barometer corrected to 32° F. and Mean Sea Level from 9 a.m. & 3 p.m. Readings.	Wind.				Mean Amount of Evaporation.	No. of Days Lightning.	Mean Amount of Clouds.	No. of Clear Days.
		Greatest Number of Miles in one day.	Mean Pressure.	Total Miles.	Prevailing Direction.				
No. of yrs. over which observation extends.	23	—	23	—	23	—	—	23	—
January	29.843	—	0.51	—	S E, N W	—	—	6.3	—
February	29.903	—	0.51	—	N W, S E	—	—	6.2	—
March	29.979	—	0.47	—	N W, S E	—	—	6.0	—
April	30.022	—	0.43	—	N W, S E	—	—	6.2	—
May	30.038	—	0.43	—	N W	—	—	6.3	—
June	29.948	—	0.43	—	N W	—	—	6.6	—
July	29.959	—	0.47	—	N W	—	—	5 8	—
August	29.959	—	0.47	—	N W	—	—	5.9	—
September	29.867	—	0.60	—	N W, S E	—	—	6.2	—
October	29.827	—	0.60	—	N W, S E	—	—	6.7	—
November	29.841	—	0.63	-	N W, S E	—	—	6.6	—
December	29.822	—	0.60	—	N W, S E	—	—	6.4	—
Year Totals ...	—	—	—	—	—	—	—	—	—
Year Averages ...	29.913	—	0.51	—	N W, S E	—	—	6.3	—
Year Extremes ...	—	—	—	—	—	—	—	—	—

TEMPERATURE.

Month.	Mean Temperature.			Extreme Shade Temperature.				Greatest Range.	Extreme Temperature.				Sea water mn. 3 ft. below surface.
	Mean Max.	Mean Min.	Mean	Highest.		Lowest.			Highest in Sun.		Lowest on Grass.		
No. of yrs. over which observation extends.	23	23	23	23		23		23	21		19*a*		—
January	70.9	53.1	62.0	105.0	1/00	40.3	2/06	64.7	160.0	§	30.6	1897	—
February	71.2	53.0	62.1	104.4	12/99	39.0	20/87	65.4	165.0	24/98	28.3	1887	—
March	68.1	50.6	59.4	97.5	7/91	36.0	31/05	61.5	147.5	1/06	27.5	30/02	—
April	63.1	47.9	55.5	82.4	6/88	33.3	24/88	49.1	138.5	12/05	25.0	1886	—
May	57.5	43.2	50.3	75.3	3/88	29.2	20/02	46.1	128.0	1889	20.0	19/02	—
June	53.0	41.5	47.2	68.5	21/97	29.5	26/02	39.0	122.0	12/94	21.0	6/87	—
July	52.1	39.3	45.7	65.4	15/98	27.7	11/95	37.7	118.7	19/96	18.7	16/86	—
August	55.0	40.9	48.0	71.5	17/02	30.5	4/97	41.0	129.0	1887	21.0	1887	—
September	58.5	42.8	53.1	79.5	*	31.0	16/97	48.5	134.0	7/94	22.7	1886	—
October	62.7	45.2	54.0	84.0	†	32.0	12/89	52.0	146.0	1885	23.8	‖	—
November	66.0	47.9	56.9	98.0	23/88	37.0	‡	61.0	151.0	17/03	26.2	29/05	—
December	69.2	50.9	60.0	105.2	30/97	38.0	3/06	67.2	156.0	18/05	27.2	1886	—
Year Averages ...	62.4	46.3	54.4	—		—		—	—		—		—
Year Extremes ...	—	—	—	105.2	30/12/97	27.7	11/7/95	77.5	165.0	24/2/98	18.7	16/7/86	—

a Records only continuous since 1893.

* 30/91 and 17/97. † 21/91 and 10-11/03. ‡ 24/84, 13/87, 11/85, and 7/00. § 5/86 and 13/05. ‖ 1886 and 1899.

HUMIDITY, RAINFALL, AND DEW.

Month.	Humidity.			Rainfall.								Dew.	
	Mean. 9 a.m.	Highest Mean.	Lowest Mean	Mean Monthly.	Mean No. of Days Rain.	Greatest Monthly.		Least Monthly.		Greatest in One Day.		Mean Amount of Dew.	Mean No. days Dew
No. of yrs. over which observation extends	12	12	12	62	49	32		32		24		—	—
January	62	70	55	1.84	9.0	5.91	1893	0.25	1878	2.59	30/05	—	—
February	64	76	51	1.51	7.8	4.51	1878	0.18	1898	1.60	22/03	—	—
March	69	76	63	1 62	8.9	3.62	1883	0.36	1884	1.45	1/83	—	—
April	76	84	69	1.75	9.8	4.33	1901	0.07	1904	1.66	22/01	—	—
May	80	85	72	1.82	12.0	6.37	1905	0.66	1871	1.62	31/05	—	—
June	83	92	75	2.18	12.8	8.15	1889	0.28	1886	4.11	14/89	—	—
July	80	88	73	2.17	13.0	4.96	1878	0.51	1902	1.56	8/94	—	—
August	79	82	71	1.85	12.1	4.82	1882	0.30	1892	2.28	13/90	—	—
September	75	82	65	2.08	13.1	4.12	1885	0.40	1891	1.57	24/85	—	—
October	69	75	63	2.11	13.7	6.67	1906	0.70	1904	2.58	4/06	—	—
November	65	76	57	2.63	12.1	7.39	1885	0.49	*	3.70	30/85	—	—
December	60	73	56	1.84	10.4	9.00	1875	0.10	1897	2.15	5/91	—	—
Year Totals ...	—	—	—	23.40	134.7	—		—		—		—	—
Year Averages ...	72	76	67	—	—	—		—		—		—	—
Year Extremes ...	—	—	—	—	—	9.00	12/1875	0.07	4/1904	4.11	14/6/89	—	—

— Signifies no record kept. * 1900 and 1901.

SECTION IV.

POPULATION.

§ 1. General Observations.

1. **Special Characteristics of Australian Population.**—(i.) *Sex Distribution.* In respect of the relative proportions of the sexes in its population, Australia has, since the first settlement of the continent in 1788, differed materially from the older countries of the world. In the latter the populations have, in general, grown by natural increase, and their composition usually reflects that fact, the numbers of males and females being in most countries approximately equal, with a more or less marked tendency, however, for the females to slightly exceed the males. The excess of females arises from a variety of causes, amongst which may be mentioned—(*a*) higher rate of mortality amongst males; (*b*) greater propensity on the part of males to travel; (*c*) the effects of war; (*d*) employment of males in the mercantile marine; (*e*) preponderance of males amongst emigrants. On the other hand, the last-mentioned cause has tended naturally to produce an excess of males in Australia, since the majority of those emigrating to Australia have been males. The circumstances under which the colonisation of Australia was first undertaken, and the remoteness of this country from Europe, have combined to accentuate this feature.

There is little doubt that the continent presented few attractions to the explorers who visited its shores, mainly on the west and north, during the sixteenth, seventeenth, and early part of the eighteenth centuries, and it was only when the Declaration of Independence of the United States, in 1776, closed to the British prison authorities the North American plantations, which had previously been used as receptacles for the deportation of convicts, that the overcrowding of the gaols caused them to consider the advisability of converting the great Southern Continent into a convict settlement. This idea was put into practice in 1787, when the first consignment of convicts left England, arriving in Sydney Cove on 26th January, 1788. Reports concerning the number actually landed are conflicting, but it appears that the total may be set down approximately at 1035, including the military. Details as to the sexes are not available, but the males must have largely preponderated. Indeed, nearly nine years later, on the 31st December, 1796, in a total population of 4100, there were 257 males to every 100 females.

The subsequent progress of Australia resulting from extensive mineral discoveries and the development of its great natural resources, pastoral, agricultural, forestal, etc., have tended to attract male rather than female immigrants, particularly in view of the distance from the principal centres of European population. Even at the end of 1906, after nearly 119 years of settlement, there were 112 males to each 100 females, and this, notwithstanding the equalising tendency due to additions to the population by means of births, and to deductions therefrom by the deaths of immigrants.

The terms "masculinity" and "femininity" have been used to express the proportion of the sexes in any group, the former indicating the ratio of males to females, the latter the reciprocal of this. viz., the ratio of females to males. The term "masculinity" is that which it is proposed to adopt, and the masculinity of any group will usually be expressed numerically as the number of males to each 100 females. The masculinity of the population of the Commonwealth at intervals of five years from 1800 onwards is as follows:—

MASCULINITY OF THE AUSTRALIAN POPULATION, QUINQUENNIALLY, FROM 1800 TO 1905.

Year.	Number of males to each 100 females.	Year.	Number of males to each 100 females.	Year.	Number of males to each 100 females.
1800	263.0	1840	201.7	1880	117.28
1805	233.3	1845	163.4	1885	118.33
1810	190.5	1850	143.2	1890	116.06
1815	188.8	1855	145.5	1895	113.41
1820	243.7	1860	140.2	1900	110.55
1825	329.8	1865	125.4	1905	111.23
1830	308.3	1870	121.10		
1835	260.7	1875	118.25		

The curious inequalities of the increases in the number of males and in the number of females for the Commonwealth as a whole, and for the individual States respectively, will be seen by referring to the graphs on pages 184 and 185.

2. **Age Distribution.**—The causes which operated to bring about an excess of males in the population of the Commonwealth, have been equally effective in rendering the age distribution essentially different from that of older countries. The majority of the immigrants, whether male or female, were in the prime of life, and as the Australian birth-rate in earlier years was a comparatively high one, the effect was to increase the relative number of young and middle-aged persons, while the number for advanced ages is below the normal.

Thus in the Commonwealth at the Census of 31st March, 1901, the age distribution of the population was as shewn in the table hereunder; that for England and Wales is given also for the sake of comparison:—

AGE-DISTRIBUTION OF POPULATION, COMMONWEALTH OF AUSTRALIA AND ENGLAND AND WALES, AT CENSUS 31ST MARCH, 1901.

Age Group.	Population of COMMONWEALTH.	Percentage on Total Population.	Population of ENGLAND and WALES.	Percentage on Total Population.
Under 15	1,325,323	35.12	10,545,739	32.42
15 and under 65 ...	2,297,689	60.88	20,464,351	62.91
65 and upwards ...	150,789	4.00	1,517,753	4.67
Total	3,773,801	100.00	32,527,843	100.00

During the past 40 years, the age distribution of the Australian population has varied considerably, as will be seen from the following table, which gives for each sex the proportion per cent. of the total population in the age groups "under 15," "15 and under 65," and "65 and over." The figures upon which these percentages have been computed are those furnished by the Censuses of the several States. Those for 1861 include the results of the Western Australian Census of 1859, while those for 1871 include the results of the Western Australian and Tasmanian Censuses of 1870:—

AGE DISTRIBUTION OF AUSTRALIAN POPULATION, 1861 TO 1901.

Census Year.	Males.				Females.				Persons.			
	Under 15 Years.	15 and under 65.	65 and over.	Total.	Under 15 Years.	15 and under 65.	65 and over.	Total.	Under 15 Years.	15 and under 65.	65 and over.	Total.
	%	%	%	%	%	%	%	%	%	%	%	%
1861	31.41	67.42	1.17	100	43.03	56.20	0.77	100	36.28	62.72	1.00	100
1871	38.84	59.11	2.05	100	46.02	52.60	1.38	100	42.09	56.17	1.74	100
1881	36.37	60.85	2.78	100	41.89	56.07	2.04	100	38.91	58.65	2.44	100
1891	34.77	62.02	3.21	100	39.36	58.08	2.56	100	36.90	60.20	2.90	100
1901	33.87	61.82	4.31	100	36.50	59.85	3.65	100	35.12	60.88	4.00	100

The excess of males over females, previously referred to, is found mainly in ages of 21 and upwards. In the total population under the age of 21 there were, at the date of the last Census, less than 102 males to each 100 females, while in that aged 21 and upwards there were more than 118 males to each 100 females. In the absence of a large immigration of males, therefore, the disparity between the sexes in Australia will soon be eliminated.

3. **Race and Nationality.**—(i.) *Constitution of Australia's Population.* Referring primarily to the numerical relation between the aboriginal and the immigrant races, including under the latter head not only those born in other countries, but also their descendants born in Australia, it may be said that the former was never at any time large. With the continued advance of settlement it has shrunk to such an extent that in the more densely populated States aboriginals are, in point of numbers, practically negligible. Thus, at the Census of 1901 the number of full-blooded aboriginals and nomadic half-castes living with those of full blood remaining in New South Wales was stated to be 4287, while in Victoria the total was only 271, and in Tasmania the last aboriginal native died in 1876.

In Queensland, South Australia, and Western Australia, on the other hand, there are considerable numbers of natives still in the "savage" state, numerical information concerning whom is of a most unreliable nature, and can be regarded as little more than the result of mere guessing. Ethnologically interesting as is this remarkable and rapidly-disappearing race, practically all that has been done to increase our knowledge of them, their laws, habits, customs, and language, has been the result of more or less spasmodic and intermittent effort on the part of enthusiasts either in private life or the public service. Strange to say, an enumeration of them has never been seriously undertaken in connection with any State Census, though a record of the numbers who were in the employ of whites, or living in contiguity to the settlements of whites, has usually been made. As stated above, various guesses at the number of aboriginal natives at present in Australia have been made, and the general opinion appears to be that 150,000 may be taken as a rough approximation to the total. It is proposed to make an attempt to enumerate the aboriginal population of Australia in connection with the first Commonwealth Census to be taken in 1911.

The number of aboriginal natives enumerated in the several States of the Commonwealth at the Census of 1901 was as follows:—

ABORIGINAL NATIVES.—ENUMERATED AT CENSUS OF 1901.

Persons, etc.	N.S.W.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Commonwealth.
Males	2,451	163	3,089	14,076	2,933	0	22,712
Females	1,836	108	2,048	12,357	2,328	0	18,677
Total	4,287[1]	271	5,137	26,433	5,261	0	41,389
Masculinity[2] ...	133.5	150.9	150.8	113.9	126.0	—	121.6

In the Commonwealth Constitution Act provision is made for aboriginal natives to be excluded for all purposes for which statistics of population are made use of under the Act, but the opinion has been given by the Commonwealth Attorney-General that, "in reckoning the population of the Commonwealth, half-castes are not aboriginal natives within the meaning of section 127 of the Commonwealth of Australia Constitution Act, and should therefore be included." It may be added, however, that "half-castes," living in the nomadic state, are practically undistinguishable from aborigines, and up to the present it has not always been found practicable to make the distinction, and no authoritative definition of "half-caste" has yet been given.

As regards the immigrant races, it may be said that they consist mainly of natives of the three divisions of the United Kingdom and their descendants. The proportion of Australian-born contained in the population of the Commonwealth has, in recent years, increased rapidly. And at the Census of 31st March, 1901, out of a total population of 3,773,801 persons, no fewer than 2,908,303, or 77.06 per cent., were Australian born, while of the remainder, 679,159, or 18.00 per cent., were natives of the United Kingdom, that is 95.06 per cent. are either Australian-born or British. The other birthplaces most largely represented in the Commonwealth were Germany, 38,352 (1.016 per cent.); China, 29,907 (0.793 per cent.); Scandinavia (comprising Sweden, Norway and Denmark), 16,144 (0.428 per cent.); Polynesia, 10,363 (0.275 per cent.); British India, 7637 (0.202 per cent.); United States of America, 7448 (0.197 per cent.); and Italy, 5678 (0.150 per cent.). The total population of Asiatic birth was 47,014 (1.246 per cent.), of whom 3593 (0.095 per cent.) were born in Japan. The total population included 5203 (0.138 per cent.) persons born at sea, and 7922 (0.210 per cent.) whose birthplaces were unspecified.

(ii.) *Biological and Sociological Significance.* As regards race and nationality, therefore, the population of Australia is fundamentally British, and thus furnishes an example of the transplanting of a race into conditions greatly differing from those in which it had been developed. The biological and sociological significance of this will ultimately appear in the effects on the physical and moral constitution produced by the complete change of climatic and social environment, for the new conditions are likely to considerably modify both the physical characteristics and the social instincts of the constituents of the population. At present the characteristics of the Australian population, whether physical, mental, moral, or social, are only in the making, and probably it will not be possible to point to a distinct Australian type until three or four generations more have passed. Even then it is hardly likely that with our great extent of territory and varying conditions we shall have but one type; on the contrary a variety of types are to be expected. The Australian at present is little other than a transplanted Briton, with the essential characteristics of his British forbears, the desire for freedom from restraint, however, being perhaps more strongly accentuated. The greater opportunity for an open-air existence, and the absence of the restrictions of older civilisations may be held to be in the main responsible for this.

4. **Differences among the States.**—(i.) *Sex Distribution.* The varying circumstances under which the settlement of the several States has been effected, and the essentially

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[1] Including 509 half-castes living in nomadic state with natives of full blood.
[2] Number of males per hundred females.

different conditions experienced in the due development of their respective resources, have naturally led to somewhat marked differences in the constitution of their populations. In the matter of sex distribution the States in which the normal condition of older countries is most nearly represented are those of Victoria and Tasmania, in the former of which the numbers of males and females are practically identical, while in the latter there are 106 males to each 100 females. In Western Australia and Queensland, on the other hand, the position of affairs is quite abnormal, the numbers of males to each 100 females being respectively 142 and 121.

The variation in the masculinity of the estimated population of the several States and of the Commonwealth as a whole during the past six years will be seen from the following table:—

MASCULINITY* OF THE POPULATION, 31ST DECEMBER, 1900 TO 1906.

State.	* Masculinity of the Population on the 31st December.						
	1900.	1901.	1902.	1903.	1904.	1905.	1906.
New South Wales ...	111.14	110.22	111.17	111.55	112.42	113.40	114.26
Victoria	101.23	101.37	100.77	100.81	99.96	100.13	100.25
Queensland ...	125.33	125.58	124.39	123.91	123.06	122.01	120.66
South Australia ...	104.04	103.50	103.08	103.02	105.53	109.28	112.85
Western Australia ...	157.54	155.85	154.14	149.41	147.15	144.31	142.15
Tasmania	107.97	107.37	108.15	107.65	106.95	106.58	106.46
Commonwealth ...	**110.55**	**110.29**	**110.42**	**110.28**	**110.64**	**111.23**	**111.70**

* Number of males to each 100 females.

(ii.) *Age Distribution*. The disparity in sex distribution exhibited by the several States is accompanied by a corresponding inequality in the matter of age distribution. The number of persons in each State at the Census of 31st March, 1901, at what are commonly known as the "dependent," "supporting," and "old" ages, and the proportion of same to total of each State and Commonwealth was as follows:—

NUMBER AND PROPORTION OF PERSONS IN COMMONWEALTH OF DEPENDENT, SUPPORTING, AND OLD AGE.

State.	Number of persons of				Proportion of Population of		
	Dependent age (under 15).	Supporting age (15 and under 65).	Old age (65 and upwards).	All ages.	Dependent age (under 15).	Supporting age (15 and under 65).	Old age (65 and upwards).
					%	%	%
New South Wales ...	486,996	821,277	46,573	1,354,846	35.94	60.62	3.44
Victoria	409,363	725,647	66,060	1,201,070	34.08	60.42	5.50
Queensland ...	182,432	302,824	12,873	498,129	36.62	60.79	2.59
South Australia ...	129,237	218,982	14,938	363,157	35.59	60.30	4.11
Western Australia ...	53,270	127,532	3,322	184,124	28.93	69.26	1.81
Tasmania	64,025	101,427	7,023	172,475	37.12	58.81	4.07
Commonwealth ...	1,325,323	2,297,689	150,789	3,773,801	35.12	60.88	4.00

Thus in Western Australia a larger proportion of its population was of supporting age than in any other State. In Tasmania the proportion is the lowest. On the other hand, in Tasmania the proportion of dependent age was the highest for the Commonwealth, while the Western Australian proportion was the lowest. Victoria had the highest and Western Australia the lowest proportion of persons aged 65 years and upwards.

(iii.) *Birthplaces.* Complete information concerning the race and nationality of the population is not available in the Census returns, the material there furnished of this nature being the records of birthplaces. The following table exhibits, in a very condensed form, the distribution of the population of the several States according to birthplace :—

BIRTHPLACES AT CENSUS OF 31ST MARCH, 1901.

Birthplace.	Total Population of Commonwealth at Census.						
	N.S.W.	Victoria.	Ql'd.	S. Aust.	W. Aust.	Tas.	C'wealth.
Australia ...	1,079,154	940,830	323,436	289,993	126,952	147,938	2,908,303
New Zealand ...	10,589	9,020	1,571	711	2,704	1,193	25,788
United Kingdom	220,401	214,371	126,159	56,862	41,551	19,815	679,159
Other European Countries ...	20,151	16,548	21,174	9,326	6,076	1,398	74,673
Asia	14,208	8,793	13,878	4,376	4,810	949	47,014
Africa	986	926	378	235	243	101	2,869
America ...	4,813	3,659	1,688	811	1,151	385	12,507
Polynesia ...	1,139	203	8,877	39	78	27	10,363
At Sea	1,967	1,564	634	539	317	182	5,203
Unspecified ...	1,438	5,156	334	265	242	487	7,922
Total ...	1,354,846	1,201,070	498,129	363,157	184,124	172,475	3,773,801

The proportions per cent. of total population of the several States for each of the birthplaces specified in the foregoing table are as follows :—

PERCENTAGE OF COMMONWEALTH POPULATION ACCORDING TO BIRTHPLACE, 31ST MARCH, 1901.

Birthplace.	Percentage of Total Population.						
	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Commonwealth.
	%	%	%	%	%	%	%
Australia	79.74	78.67	64.97	79.91	69.04	86.02	77.21
New Zealand ...	0.78	0.75	0.32	0.20	1.47	0.69	0.68
United Kingdom ...	16.28	17.93	25.34	15.67	22.60	11.52	18.03
Other European Countries	1.49	1.38	4.25	2.57	3.30	0.81	1.98
Asia	1.05	0.74	2.79	1.21	2.62	0.55	1.25
Africa	0.07	0.08	0.08	0.06	0.13	0.06	0.08
America	0.36	0.30	0.34	0.22	0.63	0.22	0.33
Polynesia	0.08	0.02	1.78	0.01	0.04	0.02	0.28
At Sea	0.15	0.13	0.13	0.15	0.17	0.11	0.14
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00

As regards distribution according to birthplace, New South Wales' population is very similar to Victoria's, the proportions born in Australia and Asia being slightly higher, and that born in the United Kingdom slightly lower, in the case of New South Wales. There is also a rough similarity between the population distributions of Queensland and Western Australia. In both the Australian-born, and also those born in "Other European Countries" and in Asia, represent a much smaller, and those born in the United Kingdom a much larger proportion than with the remaining States. Polynesians were, however, much more numerously represented in Queensland at the date of the Census than in any other State, but this position has been considerably modified by the recent deportation of

Kanakas. Natives of New Zealand were, proportionately, most numerous in Western Australia. Tasmania had the largest proportion of Australian-born population, viz., 86 per cent., while Queensland, with 65 per cent., had the least. On the other hand, more than 25 per cent. of Queensland's population consisted of natives of the United Kingdom, while only 11½ per cent. of the population of Tasmania had been born there. For the Commonwealth as a whole 98 per cent. of the population were from Australasian or European birthplaces.

§ 2. Commonwealth Population—Its Distribution and Fluctuation.

1. **Present Population.**—The estimated population of the several States of the Commonwealth since the commencement of Federation is as follows:—

POPULATION OF COMMONWEALTH ON 31ST DECEMBER, 1900 TO 1906.

Year.	Persons.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Commonwealth.
1900.	Males -	716,047	601,773	274,684	184,637	110.088	89,763	1,976,992
	Females	644.258	594,440	219,163	177,470	69,879	83.137	1,788,347
	Total -	1,360,305	1.196,213	493,847	362,107	179.967	172.900	3,765,339
1901.	Males -	721,043	609,546	281,658	186,007	118,241	90,289	2,006,784
	Females	654,197	601,336	224,286	179;724	75,868	84,091	1,819,502
	Total -	1,375,240	1,210,882	505,944	365,731	194,109	174,380	3,826,286
1902.	Males -	738,783	608,038	283,195	186,106	129,386	92,202	2,037,710
	Females	664,549	603,410	227,660	180,552	83,942	85,256	1,845,369
	Total -	1.403,332	1,211,448	510,855	366,658	213,328	177.458	3,883,079
1903.	Males -	752,627	605,364	285,297	187,151	135,960	93,045	2,059,444
	Females	674,697	603,491	230,237	181,670	90,995	86,435	1,867,525
	Total -	1,427,324	1,208,855	515,534	368,821	226,955	179,480	3,926,969
1904.	Males -	771,248	605,038	287,799	191,355	144,255	93,123	2,092,818
	Females	686.014	605,268	233,861	181,324	98,035	87,070	1,891,572
	Total -	1,457,262	1,210,306	521,660	372,679	242,290	180,193	3,984,390
1905.	Males -	792,682	609,677	290,206	197,484	150,494	93,435	2,133,978
	Females	699,038	608,896	237,847	180,722	104.285	87,664	1,918,452
	Total -	1,491,720	1,218.573	528,053	378,206	254,779	181,099	4,052,430
1906.	Males -	814,139	616,748	292,609	203,499	153,652	92,898	2,173,545
	Females	712,558	615,192	242.504	180,330	108,094	87,258	1,945.936
	Total -	1,526,697	1,231,940	535,113	383,829	261,746	180,156	4.119,481

2. **Growth of Population.**—(i.) *1788 to 1824.* From 1788, when settlement first took place in Australia, until December 1825, when Van Diemen's Land became a

separate colony, the whole of the British Possessions in Australia were regarded as one colony, viz., that of New South Wales. The population during this period increased very slowly, and at the end of 1824 had reached only 48,072.

The population with which settlement in Australia was inaugurated, and that at the end of each year until 1824, are as follows:—

POPULATION OF AUSTRALIA (INCLUDING TASMANIA) ON 31ST DECEMBER, 1788 TO 1824.

Date.	Males.	Females.	Total.	Date.	Males.	Females.	Total.
1788[1]	...	...	1,035	1806	5,389	2,521	7,910
1788	...	...	859	1807	5,989	2,855	8,794
1789	...	...	645	1808	6,822	3,441	10,263
1790	...	...	2,056	1809	7,618	3,942	11,560
1791	...	...	2,873	1810	7,585	3,981	11,566
1792	...	...	3,264	1811	7,697	4,178	11,875
1793	...	...	3,514	1812	8,132	4,498	12,630
1794	...	...	3,579	1813	9,102	4,855	13,957
1795	...	...	3,466	1814	9,295	4,791	14,086
1796	2,953	1,147	4,100	1815	9,848	5,215	15,063
1797	3,160	1,184	4,344	1816	11,690	5,863	17,553
1798	3,367	1,221	4,588	1817	14,178	7,014	21,192
1799	3,804	1,284	5,088	1818	17,286	8,573	25,859
1800	3,780	1,437	5,217	1819	21,366	10,106	31,472
1801	4,372	1,573	5,945	1820	23,784	9,759	33,543
1802	5,208	1,806	7,014	1821	26,179	9,313	35,492
1803	5,185	2,053	7,238	1822	27,915	9,449	37,364
1804	5,313	2,285	7,598	1823	30,206	10,426	40,632
1805	5,395	2,312	7,707	1824	36,871	11,201	48,072

[1] On 26th January.

(ii.) *1825 to 1858.*—The period extending from 1825 to 1859 witnessed the birth of the colonies of Tasmania (then known as Van Diemen's Land), Western Australia, South Australia, Victoria, and Queensland. The years in which these came into existence as separate colonies were as follows:—Tasmania, 1825; Western Australia, 1829; South Australia, 1836; Victoria, 1851; Queensland, 1859.

The estimated population of the Commonwealth during each year of this transition period was as follows:—

POPULATION OF AUSTRALIA (INCLUDING TASMANIA) ON 31ST DECEMBER, 1825 TO 1858.

Date.	Males.	Females.	Total.	Date.	Males.	Females.	Total.
1825	40,288	12,217	52,505	1842	153,758	87,226	240,984
1826	41,289	12,593	53,882	1843	158,846	92,002	250,848
1827	43,053	13,247	56,300	1844	165,034	99,253	264,287
1828	44,778	13,419	58,197	1845	173,159	105,989	279,148
1829	46,946	14,988	61,934	1846	181,342	111,907	293,249
1830	52,885	17,154	70,039	1847	190,265	118,532	308,797
1831	57,037	18,944	75,981	1848	201,612	130,716	332,328
1832	62,254	21,683	83,937	1849	221,978	151,384	373,362
1833	71,669	26,426	98,095	1850	238,683	166,673	405,356
1834	76,259	29,297	105,556	1851	256,975	180,690	437,665
1835	81,929	31,425	113,354	1852	304,126	209,670	513,796
1836	89,417	35,703	125,120	1853	358,203	242,789	600,992
1837	94,881	39,607	134,488	1854	414,337	280,580	694,917
1838	105,271	46,597	151,868	1855	470,118	323,142	793,260
1839	115,480	54,459	169,939	1856	522,144	354,585	876,729
1840	127,306	63,102	190,408	1857	574,800	395,487	970,287
1841	144,114	76,854	220,968	1858	624,380	426,448	1,050,828

(iii.) *1859 to 1906*. From 1859, the year in which Queensland came into existence as a separate colony, until the beginning of 1900, when the Commonwealth of Australia was inaugurated under the provisions of the Commonwealth Constitution Act, Australia consisted of six States, practically independent of each other in all matters of Government. During this period the population of the Commonwealth increased from 1,050,828 at the end of 1858 to 3,765,339 on the 31st December, 1900. The particulars for this period are given in the table hereunder.

During the six years that have elapsed since the federation of the States was effected the population of the Commonwealth has increased by 354,142, from 3,765,339 on 31st December, 1900, to 4,119,481 on 31st December, 1906. See table hereunder. (The details have already been given; see Table § 2. 1.)

POPULATION OF AUSTRALIA (INCLUDING TASMANIA) ON 31ST DECEMBER, 1859 TO 1906.

Date.	Males.	Females.	Total.	Date.	Males.	Females.	Total.
1859	644,376	452,929	1,097,305	1883	1,357,423	1,148,313	2,505,736
1860	668,560	477,025	1,145,585	1884	1,411,996	1,193,729	2,605,725
1861	669,378	498,776	1,168,149	1885	1,460,394	1,234,124	2,694,518
1862	683,650	523,268	1,206,918	1886	1,510,954	1,277,096	2,788,050
1863	704,259	555,033	1,259,292	1887	1,559,118	1,322,244	2,881,362
1864	740,433	584,750	1,325,183	1888	1,610,548	1,371,129	2,981,677
1865	773,278	616,765	1,390,043	1889	1,649,094	1,413,383	3,062,477
1866	800,648	643,307	1,443,955	1890	1,692,831	1,458,524	3,151,355
1867	819,127	664,721	1,483,848	1891	1,736,617	1,504,368	3,240,985
1868	849,272	690,280	1,539,552	1892	1,766,772	1,538,981	3,305,753
1869	875,139	717,018	1,592,157	1893	1,791,815	1,570,080	3,361,895
1870	902,494	745,262	1,647,756	1894	1,824,217	1,602,543	3,426,760
1871	928,918	771,970	1,700,888	1895	1,855,539	1,636,082	3,491,621
1872	947,422	795,425	1,742,847	1896	1,887,174	1,665,924	3,553,098
1873	972,907	821,613	1,794,520	1897	1,917,460	1,700,323	3,617,783
1874	1,001,096	848,296	1,849,392	1898	1,937,629	1,727,086	3,664,715
1875	1,028,489	869,734	1,898,223	1899	1,959,074	1,756,914	3,715,988
1876	1,061,477	897,202	1,958,679	1900	1,976,992	1,788,347	3,765,339
1877	1,102,340	928,790	2,031,130	1901	2,006,784	1,819,502	3,826,286
1878	1,132,573	959,591	2,092,164	1902	2,037,710	1,845,369	3,883,079
1879	1,168,781	993,562	2,162,343	1903	2,059,444	1,867,525	3,926,969
1880	1,204,514	1,027,017	2,231,531	1904	2,092,818	1,891,572	3,984,390
1881	1,247,059	1,059,677	2,306,736	1905	2,133,978	1,918,452	4,052,430
1882	1,289,892	1,098,190	2,388,082	1906	2,173,545	1,945,936	4,119,481

The growth of the total population of the Commonwealth generally, and of each State therein is graphically shewn on page 183, and of each sex considered separately on pages 184 and 185.

§ 3. Influences affecting Growth and Distribution of Population.

1. **Mineral Discoveries.**—The discovery of gold in Australia in 1851 was undoubtedly one of the most powerful factors in bringing about a rapid settlement of the country. Its effect may be gauged by a comparison of the increase during the ten years preceding, with that during the ten years succeeding the discovery. From 31st December, 1840, to 31st December, 1850, the increase was only 214,948 (viz., from 190,408 to 405,356). The rush of people to the newly-discovered goldfields during the succeeding decennium caused an increase of no less than 740,229, the population advancing to 1,145,585 on 31st December, 1860. In 1861, owing to the opening up in that year of the New Zealand goldfields, a rush of population from Australia set in, the result being that the net increase of population of the Commonwealth, which in 1854 amounted to 98,343, and even in 1860 was as much as 48,108, fell in 1861 to 22,564. In fact, during the year 1861 the de-

partures from Australia exceeded the arrivals by 5958, the gain of 22,564 being due to the births exceeding the deaths by 28,522.

In more recent years the gold discoveries of Western Australia in 1886 and subsequent years, led to a large influx of population to that State. Amounting on 31st December, 1885, to only 35,959, it increased in 21 years by no less than 225,787, totalling 261,746 on 31st December, 1906. In this case, however, the additions to the population of the western State were largely drawn from those of the eastern States, so that the actual gain of population to the Commonwealth was but slight.

2. **Pastoral Development.**—Very early in the colonisation of Australia it was recognised that many portions were well adapted for pastoral pursuits, and pastoral developments have led to a considerable distribution of population in various directions. As the numbers engaged in connection therewith, compared with the value of the interests involved, are relatively small, and as pastoral occupancy tends to segregation rather than aggregation of population, the growth of pastoral industry is but slightly reflected in the population statistics of the Commonwealth.

3. **Agricultural Expansion.**—At the present time the area annually devoted to crops in the Commonwealth is about 9½ million of acres. Although considerable in itself, this area, viewed in relation to the total area of the Commonwealth, is relatively small, and represents only ½ per cent. of the total area. Per head of population of the Commonwealth the area under crop, however, is 2¼ acres, a fairly high amount when allowance is made for the recency of Australian settlement. Nearly 80 per cent. of the area under crop is devoted to the production of wheat and hay, which require for their profitable production in Australia a considerable area in the one holding. Thus on the whole the agricultural districts of Australia are somewhat sparsely populated, though less sparse than the pastoral areas.

4. **Progress of Manufacturing Industries.**—One direct effect of the development of manufacturing industries, is the concentration of population in places offering the greatest facilities for the production of the particular commodities. In Australia, manufacturing industries are as yet in their infancy, and the tendency throughout Australia to concentrate the manufacturing establishments in each metropolis is a natural consequence, This, however, has accentuated the growth of the capital cities, when compared with that of the rest of the country. The consequent concentration of population in the capitals, therefore, appears to be abnormal.

5. **Influence of Droughts.**—The droughts, which at times so seriously react on the agricultural and pastoral prospects of Australia, have a marked influence on the distribution of population. Districts, which in favourable seasons were fairly populous, have, in times of drought, become more or less depopulated, but only temporarily, viz., till the return of better conditions. This movement, however, ordinarily affects only the internal distribution of the population and not the total, but severe drought may even make its influence felt in the statistics of the total population of Australia. Thus in the case of the drought of 1902-3, the departures from the Commonwealth exceeded the arrivals for the two years, 1903 and 1904, by 10,380. It may be noted also, that for the former of these years, the natural increase of population by excess of births over deaths was abnormally low, being only 51,150, as compared with 54,698 in the preceding and 60,541 in the succeeding year.

6. **Other Influences.**—(i.) *Commercial Crises.* The effect on population of a commercial crisis, such as that which occurred in Australia in the early years of the final decade of the last century, is clearly indicated on comparing the migration statistics of the Commonwealth for the five years 1887-91, with those for the five years 1892-96. During the former period, the arrivals in the Commonwealth exceeded the departures by no less than 146,872. In the latter period, the corresponding excess amounted to only 2064.

(ii.) *South African War.* The war in South Africa has apparently also left its impress on the population statistics of the Commonwealth, the departures during 1899 and 1900 exceeding the arrivals for the same period by no less than 10,546.

A reference to the graphs of population on pages 183 to 187 will illustrate the preceding observations.

§ 4. Elements of Growth of Population.

1. **Natural Increase.**—(i.) *Importance, as a Factor of Increase.* The two factors which contribute to the growth of a population are the "natural increase" by excess of births over deaths, and the "net immigration," *i.e.*, the excess of arrivals over departures. While the relative potency of these factors depends upon a variety of causes, it may be said that, in general, in the case of a new country, "net immigration" occupies an important position as a source of increase of population, while in an old country "natural increase," modified more or less by "net emigration," or excess of departures over arrivals, is the only element causing growth of population. The table hereunder gives the total natural increase, as well as that of males and females:—

NATURAL INCREASE[1] OF THE POPULATION OF AUSTRALIA, STATES AND COMMONWEALTH, FROM 1861 TO 1906.

Period.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
MALES.							
1861 to 65	22,055	34,286	2,444	9,645	765	3,761	72,956
1866 to 70	25,850	34,997	5,739	10,881	754	3,281	81,502
1871 to 75	30,067	35,132	6,704	9,979	710	3,077	85,669
1876 to 80	34,040	31,985	7,960	13,676	1,023	3,472	92,156
1881 to 85	42,658	33,614	7,986	16,969	1,002	5,284	107,513
1886 to 90	54,758	39,528	17,872	16,519	1,755	6,093	136,520
1891 to 95	56,834	45,606	20,525	15,758	1,436	6,889	147,048
1896 to 9100 ...	48,692	33,645	17,724	12,562	3,402	6,373	122,398
1901 to 05	51,179	34,332	16,628	11,926	8,283	7,955	130,303
1906 ...	12,351	7,374	4,068	2,508	2,165	1,674	30,140
1861 to 1906 ...	378,479	330,499	107,650	120,423	21,295	47,859	1,006,205
FEMALES.							
1861 to 65	26,343	39,615	3,566	9,987	1,105	4,415	85,031
1866 to 70	30,327	40,919	7,571	11,223	1,301	4,451	95,792
1871 to 75	35,567	41,472	9,706	10,944	1,255	4,192	103,136
1876 to 80	40,276	37,551	12,291	14,608	1,585	4,699	111,010
1881 to 85	50,204	39,833	15,262	18,033	1,738	6,364	131,434
1886 to 90	62,090	48,131	24,238	17,320	2,609	7,228	161,616
1891 to 95	63,930	53,190	25,757	16,792	3,376	7,781	170,826
1896 to 1900 ...	57,107	40,474	24,037	13,443	7,054	6,718	148,833
1901 to 05	59,163	39,831	22,910	12,729	11,468	8,027	154,128
1906 ...	13,622	8,233	4,856	2,507	2,551	1,648	33,417
1861 to 1906 ...	438,629	389,249	150,194	127,586	34,042	55,523	1,195,223
EXCESS OF FEMALES OVER MALES, 1861-1906.							
Number	60,150	58,750	42,544	7,163	12,747	7,664	189,018
Percentage of Male Increase ...	15.89%	17.78%	39.52%	5.95%	59.85%	16.01%	18.79%

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[1] Excess of Births over Deaths.

PERSONS.

Period.	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tas.	C'wealth.
1861 to 65	48,398	73,901	6,010	19,632	1,870	8,176	157,987
1866 to 70	56,177	75,916	13,310	22,104	2,055	7,732	177,294
1871 to 75	65,634	76,604	16,410	20,923	1,965	7,269	188,805
1876 to 80	74,316	69,536	20,251	28,284	2,608	8,171	203,166
1881 to 85	92,862	73,447	23,248	35,002	2,740	11,648	238,947
1886 to 90	116,843	87,659	42,110	33,889	4,364	13,321	298,136
1891 to 95	120,764	98,796	46,282	32,550	4,812	14,670	317,874
1896 to 1900 ...	105,799	74,119	41,761	26,005	10,456	13,091	271,231
1901 to 05	110,342	74,163	39,538	24,655	19,751	15,982	284,431
1906 ...	25,973	15,607	8,924	5,015	4,716	3,322	63,557
1861 to 1906 ...	817,108	719,748	257,844	248,009	55,337	103,382	2,201,428

With a single exception, viz., Tasmania, for the year 1906, the natural increase of females exceeded that of males throughout the 46 years referred to in the foregoing table. This excess, for the total period 1861 to 1906, is shewn in the table both in absolute numbers and as percentages of the male increase. The quinquennial period in which the largest natural increase of population took place was that of 1891-5 with a total for the Commonwealth of 317,874. For the individual States the quinquennia of maximum natural increase were as follows:—New South Wales, Victoria and Queensland 1891-5, South Australia 1881-5, and Western Australia and Tasmania 1901-5.

2. **Comparison with other Countries.** Notwithstanding the comparatively low birth-rate, Australia has a high rate of natural increase, owing to the fact that its death-rate is a very low one. The following table furnishes a comparison between the average rates of natural increase for some of the principal countries of the world for which such information is available, and those for the several States of the Commonwealth and the Dominion of New Zealand:—

NATURAL INCREASE PER 1000 OF MEAN POPULATION.

Country.	Increase.	Country.	Increase.	Country.	Increase.
Australasia (1902-6).		Europe—*continued.*		Europe—*continued.*	
Tasmania ...	18.22	Netherlands ...	15.49	Italy	10.62
Western Australia	18.12	Prussia ...	15.20	Switzerland ...	10.43
New Zealand ...	16.98	German Empire	14.54	Spain	9.22
New South Wales	15.82	Denmark ...	14.18	Ireland ...	5.55
Queensland ...	15.45	Norway ...	14.05	France ...	1.65
Australasia ...	15.11	Rumania ...	13.91		
Commonwealth	14.71	Finland ...	12.45	Asia—	
South Australia...	13.28	England & Wales	12.11	Ceylon ...	12.03
Victoria ...	12.31	Scotland ...	12.03	Japan... ...	11.65
		Austria ...	11.98		
Europe (1901-5)[1]—		Hungary ...	10.97	America—	
Bulgaria ...	17.87	Belgium ...	10.82	Jamaica ...	16.37
Servia... ...	16.31	Sweden ...	10.65	Chile	6.14

[1] 1901-5 generally for rest of table.

The graphs of natural increase for each of the States, as well as for the Commonwealth, are shewn on page 217 hereinafter.

3. **Net Immigration.**—The other factor of increase in the population, viz., the excess of arrivals over departures, known as "net immigration," is, from its nature, much more subject to marked and extensive variation than is the factor of "natural increase." These variations are due to numerous causes, many of which have already been referred to in dealing with the influences which affect the growth of population. An important cause not yet referred to, is that of assisted immigration. The number of persons so introduced varies considerably in different years.

NET IMMIGRATION, OR EXCESS OF ARRIVALS OVER DEPARTURES (STATES AND COMMONWEALTH), FROM 1861 TO 1906 INCLUSIVE.

Period.	N.S.W.	Victoria.	Q'sland.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
MALES.							
1861 to 65 ...	2,984	—15,871	34,031	10,270	3,213	— 2,865	31,762
1866 to 70 ...	23,381	13,516	10,190	— 242	1,182	— 313	47,714
1871 to 75 ...	20,346	— 8,093	26,236	3,833	— 80	— 1,916	40,326
1876 to 80 ...	48,378	— 5,696	13,892	25,056	— 179	2,418	83,869
1881 to 85 ...	70,996	19,925	54,867	— 1,982	2,701	1,860	148,367
1886 to 90 ...	29,345	51,894	18,514	—12,895	6,411	2,648	95,917
1891 to 95 ...	8,671	—33,192	5,088	— 1,493	39,443	— 2,857	15,660
1896 to 1900...	— 854	—39,805	8,095	— 8,239	36,953	2,905	— 945
1901 to 1905...	25,456	—26,428	— 1,106	921	32,128	— 4,283	26,683
1906	9,106	—303	— 1,665	3,507	993	— 2,211	9,427
1861 to 1906...	237,809	—44,053	168,142	18,736	122,760	— 4,614	498,780
FEMALES.							
1861 to 65 ...	8,578	21,527	18,824	5,993	952	— 1,165	54,709
1866 to 70 ...	9,928	16,702	4,851	1,207	517	— 500	32,705
1871 to 75 ...	9,395	2,498	11,187	774	— 18	— 2,500	21,336
1876 to 80 ...	25,081	— 169	7,792	12,977	130	462	46,273
1881 to 85 ...	38,867	7,861	27,526	— 100	957	562	75,673
1886 to 90 ...	23,220	34,337	14,811	—11,310	1,768	— 42	62,784
1891 to 95 ...	12,793	—13,656	— 422	1,964	7,758	— 1,705	6,732
1896 to 1900...	— 143	—23,777	927	— 7,627	32,043	2,009	3,432
1901 to 1905...	— 4,383	—25,875	— 4,226	— 9,477	22,938	— 3,500	—24,023
1906.	— 102	— 1,937	— 199	— 2,899	1,258	— 2,054	— 5,933
1861 to 1906...	123,234	18,011	81,071	— 8,498	68,303	— 8,433	273,688
PERSONS.							
1861 to 65 ...	11,562	5,656	52,855	16,263	4,165	— 4,030	86,471
1866 to 70 ...	33,309	30,218	15,041	965	1,699	— 813	80,419
1871 to 75 ...	29,741	— 5,595	37,423	4,607	—98	— 4,416	61,662
1876 to 80 ...	73,459	— 5,865	21,684	38,033	—49	2,880	130,142
1881 to 85 ...	109,863	27,786	82,398	— 2,082	3,658	2,422	224,040
1886 to 90 ...	52,565	86,231	33,325	—24,205	8,179	2,606	158,701
1891 to 95 ...	21,464	—46,848	4,666	471	47,201	— 4,562	22,392
1896 to 1900...	— 997	—63,582	9,022	—15,866	68,996	4,914	2,487
1901 to 1905...	21,073	—51,803	— 5,332	— 8,556	55,061	— 7,783	2,660
1906	9,004	— 2,240	— 1,864	608	2,251	— 4,265	3,494
1861 to 1906...	361,043	—26,042	249,213	10,238	191,063	—13,047	772,468

Throughout, the minus sign (—) signifies that the number of departures was in excess of arrivals.

During the period 1861-1906, viz., 46 years, the gain to the Commonwealth population by excess of arrivals over departures was 772,468 persons, while the gain by excess of births over deaths for the same period was 2,201,428. That is, nearly 26 per cent. of the increase for the Commonwealth during the past 46 years has been due to "net immigration" and 74 per cent. to "natural increase." In regard to the contribution of individual States to the total net immigration of 772,468, it may be said that for two, viz., Victoria and Tasmania, the departures for the period in question actually exceeded the arrivals, viz., by 26,042 in the case of the former, and 13,047 in that of the latter, while in South Australia the total gain for the period was only 10,238. In New South Wales, Queensland, and Western Australia on the other hand, the additions due to net immigration during the 46 years were respectively 361,048; 249,218; and 191,068.

The quinquennial period in which the greatest net immigration to the Commonwealth occurred was that of 1881-5 with a total of 224,040, whilst that in which the smallest was recorded was the period 1896-1900 with the total of only 2487. The quinquennial periods in which maximum net immigration occurred in the several States were as follows:—New South Wales and Queensland 1881-5, Victoria 1886-90, South Australia 1876-80, Western Australia and Tasmania 1896-1900. In all the States quinquennial periods have occurred in which the departures for the five years have exceeded the arrivals. The periods in which such net emigration from the several States was greatest were as follows:—New South Wales and Victoria 1896-1900, Queensland and Tasmania 1901-5, South Australia 1886-90, and Western Australia 1871-5.

The graphs shewing net increase, both for the Commonwealth as a whole and for each of the States, will be found on pages 186 and 187.

4. **Total Increase.**—(i) *Rates for various Countries.* The table hereunder furnishes particulars concerning rates of increase both for the Commonwealth, its component States, and for other countries for comparison.

RATES OF TOTAL INCREASE IN POPULATION, AUSTRALIA AND VARIOUS COUNTRIES, FOR SUCCESSIVE QUINQUENNIAL PERIODS FROM 1881 to 1906.

Countries.	Mean Annual Rate of Total Increase of Population during period—				
	1881 to 1886.	1886 to 1891.	1891 to 1896.	1896 to 1901.	1901 to 1906.
	%	%	%	%	%
AUSTRALASIA—					
Commonwealth ...	3.86	3.06	1.86	1.49	1.49
New South Wales ...	4.83	3.23	1.99	1.57	2.11
Victoria	2.60	3.12	0.37	0.52	0.34
Queensland	8.42	3.80	2.49	2.25	1.13
South Australia ...	1.41	1.15	1.63	0.77	0.97
Western Australia ...	6.13	5.54	20.81	7.25	6.16
Tasmania	2.18	2.87	1.06	1.83	0.65
New Zealand	3.31	1.47	2.41	1.98	2.90
EUROPE—					
England and Wales	1.11	1.11	1.15	1.15	† 1.15
Scotland	0.75	0.75	1.06	1.06	† 1.06
Ireland*	—0.95	—0.94	—0.60	—0.43	†—0.30
Austria	0.73	0.83	0.79	1.05	‡ 1.02
Belgium	1.13	0.75	1.15	0.92	‡ 1.33
Denmark	1.05	0.87	0.99	1.32	† 1.12
Finland	1.42	1.51	1.20	1.41	‡ 1.30
France	0.34	0.06	0.09	0.24	† 0.17
German Empire ...	0.74	1.09	1.17	1.51	‡ 1.47
Hungary	1.09	1.01	0.92	1.03	† 1.10
Italy	0.66	0.71	0.68	0.61	† 0.86
Netherlands	1.32	1.03	1.28	1.30	† 1.54
Norway	0.36	0.54	0.96	1.31	† 0.57
Prussia	0.79	1.15	1.29	1.59	† 1.58
Rumania	1.77	1.34	1.15	1.41	† 1.42
Servia	2.30	2.08	1.37	1.57	† 1.47
Spain	0.54	0.48	0.45	0.45	† 0.45
Sweden	0.57	0.40	0.61	0.86	† 0.59
Switzerland	0.38	0.40	1.22	1.10	† 0.93
ASIA—					
Ceylon	0.54	1.35	1.41	2.03	† 2.16
Japan	0.96	1.12	0.96	1.25	§ 1.41
AMERICA—					
Canada	1.10	1.08	0.97	1.19	† 1.33
Chile	2.97	0.72	2.66	0.90	† 1.96
Jamaica	0.77	1.37	1.66	1.72	† 1.64
United States ...	2.27	2.15	1.93	2.02	† 1.73

† 1901 to 1905 only. ‡ 1901 to 1904 only. § 1901 to 1903 only. * Decrease.

(ii.) *Variations in the Commonwealth Rate.* During the quarter of a century 1881-1906, the annual rate of total increase in the population of the Commonwealth has exhibited a marked decline, falling from an average of 3.86 per cent. for the five years 1881-6 to an average of 1.49 for 1901-6, the rate for the latter period being also the average for the five years 1896-1901. As regards the separate States of the Commonwealth, the rates of increase in all cases except that of Western Australia were lower, and in most instances considerably lower, for the period 1901-6 than for 1881-6. The only case, however, in which the decline was a continuous one was that of Queensland, where a fall in the rate of increase from 8.42 for 1881-6 to 1.13 for 1901-6 was experienced.

In all the other States fluctuations more or less marked have been in evidence.

(iii.) *Unsatisfactory Nature of Commonwealth Rate.* The rate of increase in the Commonwealth population is practically identical with the annual rates for Germany and Japan, the figures being respectively 1.49 per cent., 1.47 per cent., and 1.41 per cent. In view of the sparsity of the population of Australia, and the recency of its settlement, this rate of increase, equal only to that of such densely populated countries as Germany and Japan, cannot be regarded as satisfactory. When contrasted with the growth of population in the United States the comparison is even less favourable, since the annual rate of increase of that country for the period 1901-5 was 1.73 per cent. Further, if the increase in the population of the Commonwealth be compared with that of the United States under comparable conditions as to density of population, it will be seen that whilst during the seventy years 1790-1860 the population of the United States increased at a rate of slightly more than 3 per cent. per annum, that of the Commonwealth has, in the past ten years, grown at less than half that rate. The full significance of the difference between these two rates of increase will be seen on comparing the figures shewn in line (*a*) below with those appearing on line (*b*). The former represents the population of the Commonwealth in the years specified, on the assumption that the rate of increase experienced in the Commonwealth during 1901-6 remains permanently in force, while the latter shews what it would be in the same years if the rate of increase experienced in the United States during the seventy years 1790-1860 were in force.

SIGNIFICANCE OF PRESENT RATE OF GROWTH OF COMMONWEALTH POPULATION.

	31st Dec., 1906.	31st Dec., 1907.	31st Dec., 1908.	31st Dec., 1909.	31st Dec., 1910.	31st Dec., 1920.	31st Dec., 1930.	31st Dec., 1950.
(*a*)	4,119,481	4,182,000	4,245,000	4,309,000	4,374,000	5,081,000	5,902,000	7,964,000
(*b*)	4,119,481	4,244,000	4,372,000	4,504,000	4,639,000	6,244,000	8,405,000	15,226,000

(*a*) On basis of Commonwealth rate of increase 1901-6.
(*b*) On basis of U.S.A. rates of increase 1790-1860.

These are not predictions as to the probable future population of the Commonwealth, but computations shewing what the population will be if only the present rate of increase is maintained, and what it would be if the increase were as rapid as in the United States at a comparable period.

(iv.) *Density of Population.* From one aspect population may be less significant in respect of its absolute amount than in respect of the density of its distribution. The Commonwealth of Australia, with an area of 2,974,581 square miles, and a population on 31st December, 1906, of 4,119,481, has a density of only 1.38 persons to the square mile, and is, therefore, the most sparsely populated of the civilised countries of the world. For the other continents the densities are approximately as follows:—Europe, 100; Asia, 49; Africa, 15; and America, 9. The population of the Commonwealth has thus less than 16 per cent. of the density of that of America, about 9 per cent. of that of Africa, less than 3 per cent. of that of Asia, and little more than 1½ per cent. of that of Europe.

Particulars concerning the densities of the populations of some of the principal countries of the world are given in the following table:—

DENSITY OF POPULATION, AUSTRALIA AND VARIOUS COUNTRIES.

Country.	No. of Persons per Square Mile.	Country.	No. of Persons per Square Mile.	Country.	No. of Persons per Square Mile.
Belgium	622	Denmark ...	165	Russia	14.9
England and Wales	586	Hungary ...	161	Victoria[1] ...	14.0
Netherlands ...	439	Ceylon	154	Chile	11.1
Japan	324	Scotland ...	154	New Zealand ...	8.68
Italy	304	Servia	144	Tasmania[1] ...	6.87
German Empire ...	285	Ireland ...	136	New South Wales[1]	4.92
Prussia	274	Rumania ...	128	Canada ...	1.52
Austria	234	Spain	100	Commonwealth[1]...	1.38
Switzerland ...	216	United States ...	28.0	Queensland[1] ...	0.80
Jamaica	194	Finland ...	22.6	South Australia[1]	0.42
France	190	Norway ...	18.4	Western Australia[1]	0.27

1. For the Commonwealth, the density is given for 31st December, 1906. For the other countries the results are given for the latest dates available.

§ 5. Seasonal Variations of Population.

1. **Natural Increase.**—In almost all the States of the Commonwealth the natural increase of the population is greatest in the quarter ending 30th September, and least in that ending 31st March. The birth rate is usually at its highest, and the death rate at its lowest, in the September quarter, and *vice versa* in the March quarter. The average natural increases in population of the several States for each of the quarters, based upon the experience of the six years 1901 to 1906, is as follows:—

AVERAGE NATURAL INCREASE, STATES AND COMMONWEALTH, 1901-6.

State.	Natural increase and increase per 1000 for each quarter 1901-6, ended on last day of—								Average per annum, 1901-6.	
	March.		June.		September.		December.			
	Persons	o/oo	Persons	o/oo	Persons	o/oo	Persons	o/oo	Persons	o/oo
New S'th Wales	5,332	3.75	5,777	4.04	5,957	4.14	5,653	3.91	22,719	15.86
Victoria ...	3,443	2.85	3,866	3.19	4,014	3.31	3,639	3.00	14,962	12.35
Queensland ...	1,768	3.44	2,192	4.25	2,208	4.26	1,909	3.67	8,077	15.63
South Australia	1,117	3.03	1,324	3.59	1,362	3.69	1,142	3.08	4,945	13.38
W. Australia ...	898	4.07	1,003	4.45	1,232	5.36	945	4.07	4,078	17.96
Tasmania ...	737	4.16	772	4.38	849	4.82	859	4.84	3,217	18.20
Commonwealth	13,295	3.40	14,934	3.80	15,622	3.96	14,147	3.57	57,998	14.74

2. **Net Immigration.**—For the Commonwealth as a whole the increase in population for the years 1901 to 1906 was greatest in the September quarter, while in the March quarter the average excess of departures over arrivals was 1938. In New South Wales also the September quarter gives the greatest excess of arrivals over departures. In Western Australia the largest excess is in the June quarter. In South Australia and Tasmania the arrivals largely exceeded the departures in the December quarter, but in all the other quarters the departures were in excess. In Queensland, the June quarter was the only one shewing an average excess of arrivals. Victoria shews an excess of departures for every quarter, the maximum being that for that ended 30th June. Particulars concerning the average net immigration of the several States are as follows:—

AVERAGE NET IMMIGRATION, STATES AND COMMONWEALTH, 1901-6.

State.	Quarter ended on last day of—								Average Net Immigration per annum, 1901-6.	
	March.		June.		September.		December.			
	Persons	°/oo	Persons	°/oo	Persons	°/oo	Persons	°/oo	Persons	°/oo
N.S.W.	18	00.1	2,004	1.40	2,868	2.00	123	0.09	5,013	3.50
Victoria	—2,824	—2.33	—3,467	—2.86	—2,195	—1.81	— 521	—0.43	—9,007	—7.44
Q'land	— 189	—0.37	1,215	2.35	— 299	—0.58	—1,926	—3.71	—1,199	—2.32
S. Aust.	—1,012	—2.74	—1,546	—4.19	— 518	—1.40	1,751	4.72	—1,325	—3.59
W. Aust.	3,475	15.74	4.058	18.00	2,372	10.32	— 353	—1.52	9,552	42.06
Tas.	—1,406	—7.93	—1,838	-10.42	— 298	—1.69	1,534	8.64	—2,008	-11.36
C'wealth	—1,938	—0.50	426	0.11	1,930	0.49	608	0.15	1,026	0.26

Throughout the minus sign (—) denotes that the departures were in excess of arrivals, and °/oo denotes per thousand.

§ 6. Urban Population.

1. **The Metropolitan Towns.**—A feature of the distribution of population in Australia is the tendency to accumulate in the capital cities. To such an extent is this metropolitan aggregation carried, that in every State the population of the capital far outnumbers that of any other town therein, and ranges between 19 and 46 per cent. of the entire population of the State. The estimated populations of the several capitals on 31st December, 1906, and the percentages of such populations on the totals for the respective States, are shewn in table hereunder. That this metropolitan concentration is phenomenal, may be readily seen by comparing the percentage on the total population with the similar figures for the principal countries of Europe, also given in the table hereunder:—

POPULATION IN CAPITAL CITIES, STATES, AND COMMONWEALTH OF AUSTRALIA AND EUROPE.

State or Country.	City.	Year.	Population.	Percentage on total of State or Country.
				%
New South Wales ...	Sydney	31st Dec., 1906.	538,800	35.29
Victoria	Melbourne		526,400	42.73
Queensland	Brisbane		132,468	24.76
South Australia... ...	Adelaide		175,641	45.76
Western Australia ...	Perth		53,800	20.55
Tasmania	Hobart		34,985	19.42
Commonwealth	(6 Cities)		1,462,094	35.49
New Zealand	Wellington		67,535	7.43
England	London*	1906	7,113,561	20.59
Denmark...	Copenhagen	1906	514,134	19.86
Saxony	Dresden	1905	516,996	11.47
Norway	Christiania	1900	227,626	11.16
Belgium	Brussels	1900	612,401	9.15
Bavaria	Munich	1905	538,983	8.26
Scotland	Edinburgh	1906	341,035	7.22
France	Paris	1901	2,714,068	6.97
Ireland	Dublin	1906	290,638	6.63
Portugal	Lisbon...	1900	356,009	6.56
Austria	Vienna	1900	1,674,957	6.41
Sweden	Stockholm	1905	324,488	6.13
Prussia	Berlin	1905	2,040,148	5.47
Greece	Athens	1896	111,486	4.58
Netherlands	The Hague	1905	242,054	4.33
Hungary	Budapest	1900	732,322	3.80
Spain	Madrid	1900	539,835	2.90
Switzerland	Berne	1905	71,748	2.07
Italy	Rome	1901	462,743	1.42
Russia (European) ...	St. Petersburg ...	1897	1,429,000	1.33

* Greater London.

2. Provincial Towns.—In connection with the particulars shewing the tendency in Australia to concentrate population in the metropolis, it should be borne in mind that in most of the European States the capital is but one of many populous cities, and in some instances is by no means the most populous. In Australia, on the other hand, the metropolis is in every instance the most populous city, and, in most of the States, is also the only town of considerable magnitude.

In the following table are given the estimated populations of the principal Australian towns. These figures relate to the 31st December, 1906, except where otherwise specified. The metropolitan towns are included for the purpose of giving a complete view of the urban population of the Commonwealth. In the cases of the larger towns suburbs are included. The similar figures are also given for New Zealand for the purpose of comparison.

POPULATION OF PRINCIPAL TOWNS IN THE COMMONWEALTH AND NEW ZEALAND, 1906.

Population, 100,000 and upwards.

Town.	State in which situated.	Population.
Sydney	N.S.W.	538,800
Melbourne	Vic.	526,400
Adelaide	S.A.	175,641
Brisbane	Qld.	132,468

Population, 20,000 and under 100,000.

Town.	State in which situated.	Population.
Auckland	N.Z.	86,810
Christchurch	N.Z.	70,313
Wellington	N.Z.	67,585
Newcastle	N.S.W.	61,400
Dunedin	N.Z.	58,086
Perth	W.A.	53,800
Ballarat	Vic.	48,565
Bendigo	Vic.	44,140
Hobart	Tas.	34,985
Kalgoorlie and Boulder	W.A.	29,242
Broken Hill	N.S.W.	29,000
Geelong	Vic.	27,416
Launceston	Tas.	21,520
Fremantle	W.A.	20,979

Population, 10,000 and under 20,000.

Town.	State in which situated.	Population.
Rockhampton	Qld.	15,461
Gympie	Qld.	13,100
Parramatta	N.S.W.	13,000
Invercargill	N.Z.	12,507
Maryborough	Qld.	12,000
Maitland E.&W.	N.S.W.	11,020
Townsville	Qld.	11,000
Goulburn	N.S.W.	10,890
Toowoomba	Qld.	10,700
Port Pirie	S.A.	10,272
Palmerston N.	N.Z.	10,243

Population, 5000 and under 10,000.

Town.	State in which situated.	Population.
Napier	N.Z.	9,454
Bathurst	N.S.W.	9,400
Mount Morgan	Qld.	8,986
Ipswich	Qld.	8,637
Castlemaine	Vic.	8,580
Wanganui	N.Z.	8,500
Nelson	N.Z.	8,164
Timaru	N.Z.	7,615
Orange and E. Orange	N.S.W.	6,970
Albury	N.S.W.	6,780
Warrnambool	Vic.	6,650
Granville	N.S.W.	6,440
Lithgow	N.S.W.	6,380
Tamworth	N.S.W.	6,300
Queenstown	Tas.	6,196
Zeehan	Tas.	6,080
Charters Towers	Qld.	6,000
Gisborne	N.Z.	6,000
Petone	N.Z.	5,893
Grafton and S. Grafton	N.S.W.	5,860
Maryborough	Vic.	5,791
Lismore	N.S.W.	5,680
Wagga Wagga	N.S.W.	5,600
Waihi	N.Z.	5,594
New Plymouth	N.Z.	5,200
Stawell	Vic.	5,200
Oamaru	N.Z.	5,071
Masterton	N.Z.	5,026
Bundaberg	Qld.	5,000
Cairns	Qld.	5,000

The towns of New Zealand are shewn in italics.

Population, 3000 and under 5000.

Town.	State in which situated.	Population.
Forbes	N.S.W.	4,960
Mackay	Qld.	4,950
Hastings	N.Z.	4,900
Greymouth	N.Z.	4,569
Warwick	Qld.	4,500
Armidale	N.S.W.	4,400
Liverpool	N.S.W.	4,250
Hamilton	Vic.	4,170
Echuca	Vic.	4,046
Wangaratta	Vic.	4,000
Inverell	N.S.W.	4,000
Ararat	Vic.	3,951
Lyttelton	N.Z.	3,941
St. Arnaud	Vic.	3,800
Cobar	N.S.W.	3,800
Daylesford	Vic.	3,775
Thames	N.Z.	3,750
Penrith	N.S.W.	3,750
Onehunga	N.Z.	3,693
Glen Innes	N.S.W.	3,670
Maldon	Vic.	3,667
Westport	N.Z.	3,642
Wallaroo	S.A.	3,632
Albany	W.A.	3,602
Dubbo	N.S.W.	3,520
Dannevirke	N.Z.	3,509
Wellington	N.S.W.	3,500
Colac	Vic.	3,500
Lower Hutt	N.Z.	3,500
Mt. Gambier	S.A.	3,455
Kyneton	Vic.	3,416
Sale	Vic.	3,390
Mudgee	N.S.W.	3,390
Devonport	Tas.	3,383
Blenheim	N.Z.	3,351
Parkes	N.S.W.	3,260
Narrabri and W. Narrabri	N.S.W.	3,170
Beaconsfield	Tas.	3,141
Tenterfield	N.S.W.	3,120
Hay	N.S.W.	3,120
Horsham	Vic.	3,100
Bairnsdale	Vic.	3,082
Gore	N.Z.	3,050
Creswick	Vic.	3,000

§ 7. Assisted Immigration.

In the earlier days of settlement in Australia State-assisted immigration played an important part. Such assistance practically ceased in Victoria in 1873, in South Australia in 1886, and in Tasmania in 1891. In New South Wales general State-aided immigration ceased in the year 1887, but those who arrived under that system and were still residing in New South Wales might, under special regulations, send for their wives and families. A certain amount of passage money, graduated according to the age of the immigrant, was required to be paid in each case. Under the provisions of these regulations immigrants to the number of 1994 received State assistance during the years 1888 to 1899, inclusive. From 1900 to 1905 no assistance of any kind was given, but in 1906 assistance was again afforded, a total of 680 State-assisted immigrants being recorded for that year. In Queensland and Western Australia such assistance, although varying considerably in volume from year to year, has been accorded for many years past. The numbers so assisted during 1906 were 344 in Queensland and 655 in Western Australia.

The total number of immigrants to Australia from the earliest times up to the end of 1906, the cost of whose introduction was wholly or partly borne by the State, is approximately as follows:—

ASSISTED IMMIGRANTS UP TO END OF 1906.

STATES AND COMMONWEALTH.

State.	N.S.W.	Victoria.	Queensland.	South Aust.	Western Aust.	Tasmania.	Commonwealth.
No. Assisted Immigrants	212,652	140,102	170,297	95,348	8,503	21,699	648,601

§ 8. Enumerations and Estimates.

1. **Musters.**—Actual enumerations of Australia's population, of varying accuracy, have been made from the earliest times onward. Originally known as "Musters," these were first undertaken with a view to estimating the food and other requirements of the settlements. These musters, the results of which are said to have been very unreliable, appear to have been carried out at least annually from 1788 to 1825, when they were discontinued.

2. **Census-taking.**—The first regular Census in Australia was that of New South Wales, in November, 1828. The dates on which Censuses have been taken in the several States, and the populations enumerated thereat, are as shewn in table on the page immediately following.

3. **The Census of 1901.**—A conference of the State Statisticians of Australia and New Zealand held in Sydney, in February and March, 1900, aimed at securing uniformity in the collection and compilation of the Census of 1901. The householders' schedule which it drafted made provision for the collection of information in all the States under the following heads, viz.—Name, Sex, Age, Conjugal Condition, Relation to Head of Household, Occupation, Sickness and Infirmity, Birthplace, Length of Residence in Colony, Religion, Education, Materials of Houses and Numbers of Rooms. In addition to these, it was agreed that States so desiring might include further inquiries relating to Land, Live Stock, Crops, and certain other matters.

Provision was made for uniformity in the classification and compilation of the data by formulating rules for dealing with cases in which differences of opinion as to methods of treatment might exist. Thus, although conducted by six different States, the Census of the Commonwealth, as taken in 1901, was carried out on a fairly uniform plan, and consequently furnished data in many ways suitable for purposes of aggregation or comparison. A detailed examination of the results, however, gives many indications of departure from a common line of action, which, in the absence of a central authority, can hardly be avoided in an undertaking of this nature.

4. **The Census of 1911.**—Under Section 51, sub-section (xi.) of the Constitution Act, power is given to the Parliament of the Commonwealth to make laws with respect to "Census and Statistics." This power was brought into requisition in 1905, when the Census and Statistics Act 1905 became law, being assented to on 8th December, 1905. Under this Act provision is made for the appointment of a Commonwealth Statistician, and amongst other duties that officer is charged with the taking of a Census in the year 1911 and in every tenth year thereafter.

The particulars which the Act requires to be included in the Census schedule are almost identical with those which were contained in the 1901 schedule, the principal alterations being that "Length of Residence in Australia" is to be asked instead of "Length of Residence in the Colony of Enumeration," that "Duration of Marriage" is to be asked in all cases, and that nationality is to be ascertained in addition to birthplace.

AUSTRALIAN CENSUSES.

Census Year.	Population enumerated (exclusive of aborigines).						
	New South Wales.	Victoria.	Queensland	South Australia.	Western Australia.	Tasmania.	Common-wealth. (Total)
1828	(Nov.) 36,598	...	...	...	...	...	...
1833	(2nd Sept.) 60,794	...	...	...	...	...	...
1836	(2nd Sept.) 77,096	...	...	...	...	...	...
1841	(2nd March) 130,856	...	...	...	...	(27th Sept.) 50,216	...
1844	...	...	...	(26th Feb.) 17,366	...	...	...
1846	(2nd March) 189,609	...	...	(26th Feb.) 22,390	...	...	...
1847	...	...	...	...	...	(31st Dec.) 70,164	...
1848	...	...	...	...	(10th Oct.) 4,622	...	...
1851	(1st Mar.)[1] 268,344	...	...	(1st Jan.) 63,700	...	(1st Mar.) 70,130	...
1854	...	(26th Apr.)[2] 234,298	...	...	(30th Sept.) 11,743	...	...
1855	...	...	...	(31st Mar.) 85,821	...	...	...
1856	(1st March) 269,722	...	...	...	...	...	...
1857	...	(29th Mar.) 408,998	...	...	...	(31st Mar.) 81,492	...
1859	...	...	...	...	(31st Dec.) 14,837	...	...
1861	(7th April) 350,860	(7th April) 538,628	(7th April)[2] 30,059	(7th April) 126,830	...	(7th April) 89,977	...
1864	...	...	(1st Jan.) 61,467	...	...	...	..
1866	...	...	...	(26th Mar.) 163,452	...	...	...
1868	...	...	(2nd Mar.) 99,901	...	...	...	...
1870	...	...	...	...	(31st Mar.) 24,785	(7th Feb.) 99,328	...
1971	(2nd April) 502,998	(2nd April) 730,198	(1st Sept.) 120,104	(2nd April) 185,626	...	...	...
1876	...	...	(1st May) 173,283	(26th Mar.) 213,271	...	...	...
1881[3]	749,825	861,566	213,525	279,865	29,708	115,705	2,250,194
1886	...	...	(1st May) 322,853	...	...	...	...
1891[4]	1,123,954	1,139,840	393,718	320,431	49,782	146,667	3,174,392
1901[5]	1,354,846	1,201,070	498,129	363,157	184,124	172,475	3,773,801

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1. Including Port Phillip District, which afterwards became the Colony of Victoria. 2. Previously included with New South Wales. 3. 3rd April. 4. 5th April. 5. 31st March.

5. **Estimates of Population.**—In the absence of an annual enumeration of the population, it becomes necessary to adopt some method of estimating it in all cases, basing this on the results of the most recent Censuses. The manner in which this is effected varies, however, in different parts of the world. In England, for example, the assumption made is that the rate of increase of the preceding intercensal will continue unchanged during the current period. Again, in the United States, it has been assumed, in certain cases, that the numerical increase per annum ascertained for the preceding intercensal period will hold good for the current period. From the earliest times in Australia, the "statistics of fluctuation" is obtained from the records of births, deaths, arrivals and departures. With reasonable thoroughness in the collection of such statistics, the deduced estimates possess much greater weight than those based on the mere assumption of a continuation of the increase experienced in the preceding period. In most cases, however, estimates of population, based on statistics of fluctuation, are found to be in excess at the Census, thus indicating a uniform tendency to over-estimation, and the necessity for a correction. In the population figures given in the earlier portion of the present section, the estimates of the population of the several States have been carefully revised, the results of the various Censuses being taken in conjunction with the records of births, deaths, arrivals and departures. It is believed that by this means the population of the Commonwealth from the date of settlement onwards has been obtained with a high degree of accuracy, and that the figures supplied represent a reasonably close approximation to the actual numbers. Particulars for the several States from the date of settlement onwards are given in the following tables, and are shewn by graphs on pages 183 to 185:—

AUSTRALIAN POPULATION FROM EARLIEST DATE.

MALES.

Year.	Estimated Population at end of Year.						
	New South Wales.	Victoria.	Queensland	South Australia.	Western Australia.	Tasmania.	Commonwealth.
1788	...	...	...	...	...	...	†
1790	...	...	...	...	...	...	†
1795	...	...	...	...	...	...	†
1800	3,780	...	...	...	...	....	3,780
1805	5,395	...	...	...	...	...	5,395
1810	7,585	...	...	...	...	...	7,585
1815	9,848	...	...	...	...	...	9,848
1820	23,784	...	...	...	...	...	23,784
1825	29,309	...	...	...	...	10,979*	40,288
1830	33,900	...	...	...	877	18,108	52,885
1835	51,949	...	...	...	1,231	28,749	81,929
1840	85,560	...	...	8,272	1,434	32,040	127,306
1845	113,739	...	...	12,810	2,689	43,921	173,159
1850	154,976	...	...	35,902	3,576	44,229	238,683
1855	147,822	226,462*	...	48,843	8,311	38,680	470,118
1860	197,851	330,302	16,817*	64,340	9,597	49,653	668,560
1865	222,890	348,717	53,292	84,255	13,575	50,549	773,278
1870	272,121	397,230	69,221	94,894	15,511	53,517	902,494
1875	322,534	424,269	102,161	108,706	16,141	54,678	1,028,489
1880	404,952	450,558	124,013	147,438	16,985	60,568	1,204,514
1885	518,606	504,097	186,866	162,425	20,688	67,712	1,460,394
1890	602,704	595,519	223,252	166,049	28,854	76,453	1,692,831
1895	668,209	607,933	248,865	180,314	69,733	80,485	1,855,539
1900	716,047	601,773	274,684	184,637	110,088	89,763	1,976,992
1901	721,043	609,546	281,658	186,007	118,241	90,289	2,006,784
1902	738,783	608,038	283,195	186,106	129,386	92,202	2,037,710
1903	752,627	605,364	285,297	187,151	135,960	93,045	2,059,444
1904	771,248	605,038	287,799	191,355	144,255	93,123	2,092,818
1905	792,682	609,677	290,206	197,484	150,494	93,435	2,133,978
1906	814,139	616,748	292,609	203,499	153,652	92,898	2,173,545

* Previously included with New South Wales. † Details not available.

FEMALES.

Year.	Estimated Population at end of Year.						
	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
1788	...	...	...	...	...	...	†
1790	...	...	...	...	...	...	†
1795	...	...	...	...	...	...	†
1800	1,437	...	...	...	...	...	1,437
1805	2,312	...	...	...	...	...	2,312
1810	3,981	...	...	...	...	...	3,981
1815	5,215	...	...	...	...	...	5,215
1820	9,759	...	...	...	...	...	9,759
1825	9,004	...	...	...	...	3,213*	12,217
1830	10,688	...	...	...	295	6,171	17,154
1835	19,355	...	...	...	647	11,423	31,425
1840	41,908	...	...	6,358	877	13,959	63,102
1845	74,179	...	...	9,650	1,790	20,370	105,989
1850	111,924	...	...	27,798	2,310	24,641	166,673
1855	118,179	120,843*	...	48,544	4,294	31,282	323,142
1860	150,695	207,932	11,239*	61,242	5,749	40,168	477,025
1865	185,616	269,074	33,629	77,222	7,806	43,418	616,765
1870	225,871	326,695	46,051	89,652	9,624	47,369	745,262
1875	270,833	370,665	66,944	101,370	10,861	49,061	869,734
1880	336,190	408,047	87,027	128,955	12,576	54,222	1,027,017
1885	425,261	455,741	129,815	146,888	15,271	61,148	1,234,124
1890	510,571	538,209	168,864	152,898	19,648	68,334	1,458,524
1895	587,294	577,743	194,199	171,654	30,782	74,410	1,636,082
1900	644,258	594,440	219,163	177,470	69,879	83,137	1,788,347
1901	654,197	601,336	224,286	179,724	75,868	84,091	1,819,502
1902	664,549	603,410	227,660	180,552	83,942	85,256	1,845,369
1903	674,697	603,491	230,237	181,670	90,995	86,435	1,867,525
1904	686,014	605,268	233,861	181,324	98,035	87,070	1,891,572
1905	699,038	608,896	237,847	180,722	104,285	87,664	1,918,452
1906	712,558	615,192	242,504	180,330	108,094	87,258	1,945,936

PERSONS.

Year.	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
1788	859	...	...	...	...	...	859
1790	2,056	...	...	...	...	...	2,056
1795	3,466	...	...	...	...	...	3,466
1800	5,217	...	...	...	...	...	5,217
1805	7,707	...	...	...	...	...	7,707
1810	11,566	...	...	...	...	...	11,566
1815	15,063	...	...	...	...	...	15,063
1820	33,543	...	...	...	...	...	33,543
1825	38,313	...	...	...	...	14,192*	52,505
1830	44,588	...	...	...	1,172	24,279	70,039
1835	71,304	...	...	...	1,878	40,172	113,354
1840	127,468	...	...	14,630	2,311	45,999	190,408
1845	187,918	...	...	22,460	4,479	64,291	279,148
1850	266,900	...	...	63,700	5,886	68,870	405,356
1855	266,001	347,305*	...	97,387	12,605	69,962	793,260
1860	348,546	538,234	28,056*	125,582	15,346	89,821	1,145,585
1865	408,506	617,791	86,921	161,477	21,381	93,967	1,390,043
1870	497,992	723,925	115,272	184,546	25,135	100.886	1,647,756
1875	593,367	794,934	169,105	210,076	27,002	103,739	1,898,223
1880	741,142	858,605	211,040	276,393	29,561	114,790	2,231,531
1885	943,867	959,838	316,681	309,313	35,959	128,860	2,694,518
1890	1,113,275	1,133,728	392,116	318,947	48,502	144,787	3,151,355
1895	1,255,503	1,185,676	443,064	351,968	100,515	154,895	3,491,621
1900	1,360,305	1,196,213	493,847	362,107	179,967	172,900	3,765,339
1901	1,375,240	1,210,882	505,944	365,731	194.109	174,380	3,826,286
1902	1,403,332	1,211,448	510,855	366.658	213,328	177,458	3,883,079
1903	1,427,324	1,208,855	515,534	368,821	226,955	179,480	3,926,969
1904	1,457,362	1,210,306	521,660	372,679	242,290	180,193	3,984,390
1905	1,491,720	1,218,573	528,053	378,206	254,779	181,099	4,052,430
1906	1,526,697	1,231,940	535,113	383,829	261,746	180,156	4,119,481

* Previously included with New South Wales.

† Details not available.

The tables on the two preceding pages, shewing the quinquennial figures for the male, female, and total population of each State and the Commonwealth, give sufficient indication, for general purposes, of its progress. A reference to the graphs given hereinafter (in this section), on which the curve shews the particulars for *each* year, is also desirable. The characteristics of the fluctuations of each element, or of the totals, will be more readily perceived by reference to the graphs than they possibly can by reference to these numerical tables. The earliest date for which particulars as to sex were available was 1796. The figures from 1788 to 1825 inclusive shew the results of the musters taken in those years; those for subsequent years are founded upon estimates made at the end of each year on the basis of the preceding Census and the annual returns of births and deaths, and immigration and emigration. These estimates have, however, been corrected so as to accord with subsequent Censuses.

§ 9. Principal Results of Census of 1901.

1. **Ages.**—The following tables, viz., (*a*), (*b*), and (*c*), furnish particulars concerning the ages of the population of the Commonwealth at the Census taken on 31st March, 1901, the first for males, the second for females, and the third for persons, *i.e.*, for males and females together:—

AGE DISTRIBUTION OF AUSTRALIAN POPULATION ON 31ST MARCH, 1901.

(*a*) MALES.

Age Group.	N.S.W.	Victoria	Queensland.	South Australia	Western Australia.	Tasmania.	Total, Commonwealth.
Under 1 year ...	17,142	14,384	6,544	4,188	2,572	2,333	47,163
1 and under 5 ...	63,166	52,408	24,763	16,072	7,869	8,369	172,647
5 ,, 10 ...	84,189	72,045	31,908	22,756	8,891	11,160	230,949
10 ,, 15 ...	81,582	67,374	29,005	22,193	7,505	10,649	218,308
15 ,, 20 ...	70,423	58,882	23,684	20,007	7,088	9,388	189,472
20 ,, 21 ...	12,754	10,429	4,830	3,618	1,957	1,644	35,232
21 ,, 25 ...	49,694	40,150	19,760	13,023	9,884	6,617	139,128
25 ,, 30 ...	56,273	45,458	28,634	18,771	15,822	7,276	162,234
30 ,, 35 ...	52,596	46,628	22,639	12,945	14,845	6,422	156,075
35 ,, 40 ...	52,335	46,715	22,088	12,013	12,441	6,262	151,849
40 ,, 45 ...	44,930	37,111	18,419	11,371	8,722	5,273	125,826
45 ,, 50 ...	33,338	24,126	13,046	9,033	5,220	3,760	88,523
50 ,, 55 ...	25,615	18,337	10,187	6,767	3,453	2,797	67,156
55 ,, 60 ...	19,634	15,337	7,981	5,336	2,311	1,996	52,595
60 ,, 65 ...	16,733	14,972	6,783	3,992	1,767	1,729	45,976
65 ,, 70 ...	13,005	16,077	4,131	2,872	1,101	1,292	38,478
70 ,, 75 ...	7,772	11,777	2,230	2,282	692	1,123	25,876
75 ,, 80 ...	3,578	5,732	959	1,290	290	756	12,605
80 ,, 85 ...	1,883	2,452	453	646	140	459	6,033
85 ,, 90 ...	565	603	107	197	30	160	1,662
90 ,, 95 ...	174	130	27	43	5	30	409
95 ,, 100 ...	49	30	7	4	1	8	99
100 and upwards ...	12	12	2	3	...	1	30
Not stated—							
Adults ...	2,286	2,049	3,041	...	261	120	7,757
Children ...	277	502	7	...	8	...	794
Unspecified ...	...	...	*773	*279	...	...	*1,052
Total ...	710,005	603,720	277,003	184,701	112,875	89,624	1,977,928

* Half-castes.

(b) FEMALES.

Age Group.	N.S.W.	Victoria.	Qsld.	S. Aust.	W. Aust.	Tas.	Total C'wealth.
Under 1 year	17,014	13,942	6,323	4,008	2,455	2,273	46,015
1 and under 5	61,539	51,221	24,364	15,809	7,779	7,890	168,602
5 .. 10	81,946	70,483	30,947	22,612	8,856	10,864	225,708
10 .. 15	80,097	66,628	28,557	21,599	7,320	10,487	214,688
15 .. 20	70,736	59,712	22,792	20,162	5,849	9,063	188,314
20 .. 21	13,457	11,629	4,368	3,727	1,278	1,809	36,268
21 .. 25	51,361	45,989	16,818	13,813	6,001	6,340	140,322
25 .. 30	56,043	52,822	18,284	14,253	8,677	6,561	156,640
30 .. 35	46,697	48,150	15,958	12,368	7,298	5,576	136,047
35 .. 40	41,593	43,388	13,705	11,213	5,322	5,217	120,438
40 .. 45	33,436	33,546	10,710	9,596	3,391	4,467	95,146
45 .. 50	24,001	21,804	7,402	7,277	2,151	3,094	65,729
50 .. 55	19,327	17,589	6,042	5,573	1,678	2,379	52,588
55 .. 60	15,376	15,156	4,918	4,545	1,177	1,885	43,057
60 .. 65	12,192	14,288	3,957	4,026	908	1,725	37,096
65 .. 70	9,237	13,842	2,400	3,051	570	1,321	30,421
70 .. 75	5,202	8,359	1,382	2,280	279	910	18,412
75 .. 80	2,844	4,231	705	1,262	133	514	9,689
80 .. 85	1,574	2,065	348	698	56	302	5,038
85 .. 90	511	587	94	240	21	109	1,562
90 .. 95	138	125	24	61	3	34	385
95 .. 100	25	27	6	8	1	3	70
100 and upwards	4	11	3	1	...	1	20
Not stated—							
Adults ...	447	1,380	250	...	31	27	2,135
Children ...	44	376	14	...	15	...	449
Unspecified	...	...	* 760	* 274	...	...	1,034
Total ...	644,841	597,350	221,126	178,456	71,249	82,851	1,795,873

(c) PERSONS.

Under 1 year ...	34,156	28,326	12,867	8,196	5,027	4,606	98,178
1 and under 5	124,705	103,629	49,127	31,881	15,648	16,259	341,249
5 ,, 10	166,135	142,528	62,855	45,368	17,747	22,024	456,657
10 ,, 15	161,679	134,002	57,562	43,792	14,825	21,136	432,996
15 ,, 20	141,159	118,594	46,476	40,169	12,937	18,451	377,786
20 ,, 21	26,211	22,058	9,198	7,345	3,235	3,453	71,500
21 ,, 25	101,055	86,139	36,578	26,836	15,885	12,957	279,450
25 ,, 30	112,316	98,280	41,918	28,024	24,499	13,837	318,874
30 ,, 35	99,293	94,778	38,597	25,313	22,143	11,998	292,122
35 ,, 40	93,928	90,103	35,788	23,226	17,763	11,479	272,287
40 ,, 45	78,366	70,657	29,129	20,967	12,113	9,740	220,972
45 ,, 50	57,339	45,930	20,448	16,310	7,371	6,854	154,252
50 ,, 55	44,942	35,926	16,229	12,340	5,131	5,176	119,744
55 ,, 60	35,010	30,493	12,899	9,881	3,488	3,881	95,652
60 ,, 65	28,925	29,260	10,740	8,018	2,675	3,454	83,072
65 ,, 70	22,242	29,919	6,531	5,923	1,671	2,613	68,899
70 ,, 75	12,974	20,136	3,612	4,562	971	2,033	44,288
75 ,, 80	6,422	9,963	1,664	2,552	423	1,270	22,294
80 ,, 85	3,457	4,517	796	1,344	196	761	11,071
85 ,, 90	1,076	1,190	201	437	51	269	3,224
90 ,, 95	312	255	51	104	8	64	794
95 ,, 100	74	57	13	12	2	11	169
100 & upwards	16	23	5	4	...	2	50
Not stated—							
Adults ...	2,733	3,429	3,291	...	292	147	9,892
Children ...	321	878	21	...	23	...	1,243
Unspecified...	...	...	*1,533	*553	...	...	*2,086
Total ...	1,354,846	1,201,070	498,129	363,157	184,124	172,475	3,773,801

* Half-castes.

2. **Birthplaces.**—In the next three tables complete statistics of the birthplaces of the population of the Commonwealth at the date of the Census are given, arranged as in the case of ages.

AUSTRALIAN POPULATION, 31ST MARCH, 1901, CLASSIFIED ACCORDING TO BIRTHPLACE
(a) MALES.

Birthplaces.	N.S.W.	Vic.	Qld.	S. Aus.	W. Aus.	Tas.	Total C'wealth.
AUSTRALASIA—							
Commonwealth of Australia—							
New South Wales	487,039	10,624	15,017	2,100	8,395	1,064	524,239
Victoria	30,358	428,691	6,721	5,134	24,342	4,502	499,748
Queensland	7,097	1,352	143,056	332	1,474	127	153,438
South Australia	11,981	10,718	1,528	133,828	9,686	458	168,199
Western Australia	450	672	106	478	26,529	53	28,288
Tasmania	3,722	6,871	838	404	1,071	69,098	81,999
Australia (undefined)	239	404	13	458	61	7	1,182
Total Commonwealth ...	540,886	459,332	167,279	142,734	71,558	75,304	1,457,093
New Zealand	5,425	4,404	982	374	1,757	626	13,568
Total Australasia	546,311	463,736	168,261	143,108	73,315	75,930	1,470,661
EUROPE—							
England	76,187	62,770	40,257	20,672	17,215	7,558	230,332
Wales	2,254	2,101		494	644	180	
Scotland	18,566	19,003	11,745	3,835	3,953	1,652	58,754
Ireland	30,463	28,796	19,376	5,096	6,413	1,893	92,037
Other European British Possessions ...	98	60	48	15	39	5	265
Austria-Hungary	594	337	186	133	390	21	1,661
Belgium	104	83	28	14	25	10	264
Denmark	1,150	882	2,102	235	281	99	4,749
France	1,354	633	280	155	170	26	2,618
Germany	6,344	5,295	7,668	3,958	1,255	482	25,002
Greece	357	171	85	52	146	4	815
Holland	191	165	51	56	36	12	511
Italy	1,243	1,289	708	293	1,296	42	4,871
Portugal	120	78	24	14	37	14	287
Rumania...	11	31	2	6	12	...	62
Russia	1,022	713	334	214	331	34	2,648
Spain	65	115	28	28	142	6	384
Sweden and Norway	3,010	2,083	1,634	879	1,120	205	8,881
Switzerland	363	749	321	67	98	13	1,611
Other European Countries	57	60	41	‡132	29	6	325
Total Europe	143,553	125,364	84,918	36,348	33,632	12,262	436,077
ASIA—							
British India	2,270	1,319	1,117	558	625	186	6,075
Ceylon	143	71	162	24	67	12	479
Hong Kong	64	48	5	12	7	2	138
Straits Settlements	55	44	162	32	323	2	618
Other Asiatic British Possessions ...	5	28	15	4	23	5	80
Afghanistan	55	8	27	41	261	1	393
Arabia	19	7	19	5	3	...	53
China	9,890	6,158	8,366	3,167	1,459	473	29,513
Japan	161	67	2,113	168	658	...	3,167
Java	7	10	...	24	226	...	267
Philippine Islands	15	13	217	62	370	...	677
Syria	467	228	252	...	...	39	986
Other Asiatic Countries	70	18	*836	2	394	6	1,326
Total Asia	13,221	8,019	13,291	4,099	4,416	726	43,772
AFRICA—							
Cape Colony	190	167	27	33	27	8	452
Mauritius	167	138	69	33	61	9	477
Natal	11	31	9	6	4	5	66
Other African British Possessions ...	101	125	97	32	10	12	377
Algeria	89	...	1	...	...	1	91
Egypt	28	16	14	8	8	2	76
Other African Countries	56	26	40	17	50	14	203
Total Africa	642	503	257	129	160	51	1,742
AMERICA—							
Barbadoes	24	11	3	14	12	...	64
Canada	820	667	324	118	205	61	2,195
Jamaica	91	71	33	27	25	3	250
Newfoundland	27	38	16	17	6	6	110
Other American British Possessions ...	200	114	118	35	30	22	519
Argentine Republic	9	6	4	5	4	...	28
Brazil	18	25	10	4	12	3	72
Chile	32	15	7	3	12	...	69
Mexico	14	15	8	2	4	...	43
Peru	9	7	2	1	2	...	21
United States of America	2,156	1,365	670	333	526	167	5,217
Other American Countries	86	42	72	11	80	10	301
Total American	3,486	2,376	1,267	570	918	272	8,889
POLYNESIA—							
Fiji	180	58	34	5	21	9	307
Friendly Islands (Tonga)	27	10	...	2	2	...	41
Other Polynesian British Possessions...	45	...	4	1	3	...	53
New Caledonia	123	4	...	...	4	...	131
New Hebrides	63	6	...	1	1	...	71
Samoa	30	4	...	6	3	...	43
South Sea Islands (so described) ...	284	3	†8,408	1	4	1	8,701
Other Polynesian Islands	31	5	...	...	14	1	51
Total Polynesia	783	90	8,446	16	52	11	9,398
AT SEA	1,100	782	336	259	182	88	2,747
UNSPECIFIED	909	2,850	227	172	200	284	4,642
Grand Total	710,005	603,720	277,003	184,701	112,875	89,624	1,977,928

* Including 637 Malay Peninsula and Archipelago. † Pacific Islands so described.
‡ Including Asiatic Turkey.

(b) FEMALES.

Birthplaces.	N.S.W.	Vic.	Qld.	S. Aus.	W.Aus.	Tas.	Total C'wealth
AUSTRALASIA—							
Commonwealth of Australia—							
New South Wales	490,137	11,780	9,843	2,028	5,727	1,011	520,526
Victoria	25,661	447,084	3,551	5,190	15,149	3,447	500,082
Queensland	7,871	1,666	141,338	274	1,121	161	152,431
South Australia	10,078	11,206	856	138,396	6,564	429	167,529
Western Australia	437	795	98	478	26,134	43	27,980
Tasmania	3,855	8,492	470	415	679	67,536	81,447
Australia (undefined)	229	475	6	478	20	7	1,215
Total Commonwealth ...	538,268	481,498	156,157	147,259	55,394	72,634	1,451,210
New Zealand	5,164	4,616	589	337	947	567	12,220
Total Australasia	543,432	486,114	156,746	147,596	56,341	73,201	1,463,430
EUROPE—							
England	49,930	50,662	28,332	17,117	8,165	5,100	162,989
Wales	1,368	1,575		371	265	104	
Scotland	12,151	16,748	8,189	3,130	1,447	1,334	42,999
Ireland	29,482	32,716	18,260	6,147	3,449	1,994	92,048
Other European British Possessions ...	52	50	28	7	23	5	165
Austria-Hungary	73	66	43	29	28	2	241
Belgium	34	40	7	4	5	3	93
Denmark	216	138	1,056	27	39	56	1,532
France	433	292	84	61	84	20	974
Germany	2,288	2,313	5,495	2,696	267	291	13,350
Greece	35	10	6	7	2	3	63
Holland	21	39	11	6	5	1	83
Italy	334	236	137	34	58	8	807
Portugal	8	8	...	4	3	1	24
Rumania...	2	20	...	2	3	...	27
Russia	240	241	120	37	69	3	710
Spain	39	60	6	12	9	5	131
Sweden and Norway	180	174	508	52	54	14	982
Switzerland	91	154	120	37	20	6	428
Other European Countries	22	13	13	‡60	...	1	109
Total Europe	96,999	105,555	62,415	29,840	13,995	8,951	317,755
ASIA—							
British India	507	465	171	121	· 123	175	1,562
Ceylon	37	39	21	7	17	9	130
Hong Kong	16	2	2	8	...	1	29
Straits Settlements	12	9	9	4	9	3	46
Other Asiatic British Possessions ...	...	22	3	...	1	4	30
Afghanistan	...	...	...	...	...	...	...
Arabia	1	2	5	...	...	...	8
China	103	72	106	86	16	11	394
Japan	17	9	144	46	209	1	426
Java	8	11	...	4	4	...	27
Philippine Islands	7	3	1	1	...	...	12
Syria	272	137	85	...	...	18	512
Other Asiatic Countries	7	3	*40	...	15	1	66
Total Asia	987	774	587	277	394	223	3,242
AFRICA—							
Cape Colony	118	189	15	26	16	13	377
Mauritius	89	78	32	32	21	11	263
Natal	4	19	6	3	5	3	40
Other African British Possessions ...	80	122	56	35	5	12	310
Algeria	1	1	...	...	...	...	2
Egypt	15	8	2	5	2	...	32
Other African Countries	37	6	10	5	34	11	103
Total Africa	344	423	121	106	83	50	1,127
AMERICA—							
Barbadoes	4	7	2	...	1	...	14
Canada	243	328	80	72	62	26	811
Jamaica	27	68	6	2	6	3	112
Newfoundland	21	14	1	5	1	1	43
Other American British Possessions ...	45	54	38	16	9	9	171
Argentine Republic	5	3	1	4	2	1	16
Brazil	9	17	4	...	2	1	33
Chile	12	7	1	...	1	...	21
Mexico	8	2	5	1	1	1	18
Peru	...	6	1	...	...	...	7
United States of America	908	742	256	127	132	66	2,231
Other American Countries	45	35	26	14	16	5	141
Total America	1,327	1,283	421	241	233	113	3,618
POLYNESIA—							
Fiji	138	76	26	7	16	15	278
Friendly Islands (Tonga)	29	4	...	8	1	...	42
Other Polynesian British Possessions...	13	1	4	...	...	...	18
New Caledonia	81	9	...	2	3	...	95
New Hebrides	17	9	...	2	...	...	28
Samoa	31	5	...	4	2	...	42
South Sea Islands (so described) ...	23	1	†401	...	1	1	427
Other Polynesian Islands	24	8	...	...	3	...	35
Total Polynesia	356	113	431	23	26	16	965
AT SEA	867	782	298	280	135	94	2,456
UNSPECIFIED	529	2,306	107	93	42	203	3,280
Grand Total	644,841	597,350	221,126	178,456	71,249	82,851	1,795,873

* Including 22 Malay Peninsula and Archipelago. † Pacific Islands so described.
‡ Including Asiatic Turkey.

(c) PERSONS.

Birthplaces.	N.S.W.	Vic.	Qld.	S. Aus.	W. Aus.	Tas.	Total. C'wealth.
AUSTRALASIA—							
Commonwealth of Australia—							
New South Wales	977,176	22,404	24,860	4,128	14,122	2,075	1,044,765
Victoria	56,019	875,775	10,272	10,324	39,491	7,949	999,830
Queensland	14,968	3,018	284,394	606	2,595	288	305,869
South Australia	22,059	21,924	2,384	272,224	16,250	887	335,728
Western Australia	887	1,467	199	956	52,663	96	56,268
Tasmania	7,577	15,363	1,308	819	1,750	136,629	163,446
Australia (undefined) ...	468	879	19	936	81	14	2,397
Total Commonwealth ...	1,079,154	940,830	323,436	289,993	126,952	147,938	2,908,303
New Zealand	10,589	9,020	1,571	711	2,704	1,193	25,788
Total Australasia ...	1,089,743	949,850	325,007	290,704	129,656	149,131	2,934,091
EUROPE—							
England	126,117	113,432	68,589	37,789	25,380	12,658	393,321
Wales	3,622	3,676		865	909	284	
Scotland	30,717	35,751	19,934	6,965	5,400	2,986	101,753
Ireland	59,945	61,512	37,636	11,243	9,862	3,887	184,085
Other European British Possessions	150	110	76	22	62	10	430
Austria-Hungary	667	403	229	162	418	23	1,902
Belgium	138	123	35	18	30	13	357
Denmark	1,366	1,020	3,158	262	320	155	6,281
France	1,787	925	364	216	254	46	3,592
Germany	8,632	7,608	13,163	6,654	1,522	773	38,352
Greece	392	181	91	59	148	7	878
Holland	212	204	62	62	41	13	594
Italy	1,577	1,525	845	327	1,354	50	5,678
Portugal	128	86	24	18	40	15	311
Rumania	13	51	2	8	15	...	89
Russia	1,262	954	454	251	400	37	3,358
Spain	104	175	34	40	151	11	515
Sweden and Norway	3,190	2,207	2,142	931	1,174	219	9,863
Switzerland	454	903	441	104	118	19	2,039
Other European Countries ...	79	73	54	‡192	29	7	434
Total Europe	240,552	230,919	147,333	66,188	47,627	21,213	753,832
ASIA—							
British India	2,777	1,784	1,288	679	748	361	7,637
Ceylon	180	110	183	31	84	21	609
Hong Kong	80	50	7	20	7	3	167
Straits Settlements	67	53	171	36	332	5	664
Other Asiatic British Possessions ...	5	50	18	4	24	9	110
Afghanistan	55	8	27	41	261	1	393
Arabia	20	9	24	5	3	...	61
China	9,993	6,230	8,472	3,253	1,475	484	29,907
Japan	178	76	2,257	214	867	1	3,593
Java	15	21	...	28	230	...	294
Philippine Islands	22	16	218	63	370	...	689
Syria	739	365	337	...	...	57	1,498
Other Asiatic Countries	77	21	*876	2	409	7	1,392
Total Asia	14,208	8,793	13,878	4,376	4,810	949	47,014
AFRICA—							
Cape Colony	308	356	42	59	43	21	829
Mauritius	256	216	101	65	82	20	740
Natal	15	50	15	9	9	8	106
Other African British Possessions...	181	247	153	67	15	24	687
Algeria	90	1	1	...	...	1	93
Egypt	43	24	16	13	10	2	108
Other African Countries ...	93	32	50	22	84	25	306
Total Africa	986	926	378	235	243	101	2,869
AMERICA—							
Barbadoes	28	18	5	14	13	...	78
Canada	1,063	995	404	190	267	87	3,096
Jamaica	118	139	39	29	31	6	362
Newfoundland	48	52	17	22	7	7	153
Other American British Possessions	245	168	156	51	39	31	690
Argentine Republic	14	9	5	9	6	1	44
Brazil	27	42	14	4	14	4	105
Chile	44	22	8	3	13	...	90
Mexico	22	17	13	3	5	1	61
Peru	9	13	3	1	2	...	28
United States of America ...	3,064	2,107	926	460	658	233	7,448
Other American Countries ...	131	77	98	25	96	15	442
Total America	4,813	3,659	1,688	811	1,151	385	12,507
POLYNESIA—							
Fiji	318	134	60	12	37	24	585
Friendly Islands (Tonga) ...	56	14	...	10	3	...	83
Other Polynesian Brit. Possessions	58	1	8	1	3	...	71
New Caledonia	204	13	...	2	7	...	226
New Hebrides	80	15	...	3	1	..	99
Samoa	61	9	...	10	5	...	85
South Sea Islands (so described) ...	307	4	†8,809	1	5	2	9,128
Other Polynesian Islands ...	55	13	...	...	17	1	86
Total Polynesia ...	1,139	203	8,877	39	78	27	10,363
AT SEA	1,967	1,564	634	539	317	182	5,203
UNSPECIFIED	1,438	5,156	334	265	242	487	7,922
Grand Total	1,354,846	1,201,070	498,129	363,157	184,124	172,475	3,773,801

* Including 659 Malay Peninsula and Archipelago. † Pacific Islands so described.

‡ Including Asiatic Turkey.

3. **Occupations.**—Details relative to the occupations of the population of the Commonwealth at the date of the Census are contained in the succeeding three tables, arranged as in the case of ages and birthplaces :—

AUSTRALIAN POPULATION ON 31ST MARCH, 1901, CLASSIFIED ACCORDING TO OCCUPATION.

(*a*) MALES.

OCCUPATION. Description.	N.S.W	Vic.	Q'land.	S. Aus.	W. Aus.	Tas.	Total C'w'lth
Class I.—PROFESSIONAL—							
Engaged in Government, defence, law, etc. ...	10,809	6,716	3,800	1,963	1,986	1,312	26,586
Ministering to religion, charity, health, education, etc.	16,046	13,664	5,322	3,409	3,117	1,755	43,313
Total—Class I. ...	26,855	20,380	9,122	5,372	5,103	3,067	69,899
Class II.—DOMESTIC—							
Engaged in supplying board and lodging ...	8,258	6,984	3,072	1,482	2,474	701	22,971
„ domestic service and attendance	11,870	6,144	4,719	1,970	1,899	762	27,364
Total—Class II. ...	20,128	13,128	7,791	3,452	4,373	1,463	50,335
Class III.—COMMERCIAL—							
Dealing in property and finance	8,985	10,039	3,004	2,267	1,482	1,008	26,785
„ art and mechanic productions ...	4,144	3,720	1,543	810	728	305	11,250
„ textile fabrics, dress & fibrous materials	6,957	6,374	2,291	1,654	969	707	18,952
„ food, drinks, narcotics & stimulants ...	19,522	18,216	6,642	4,460	2,596	1,301	52,737
„ animals, animal and vegetable substances, N.E.I.	5,984	3,977	1,549	958	730	329	13,527
„ fuel and light	2,084	2,794	911	591	476	255	7,111
„ metals and other minerals	2,136	2,044	709	636	543	195	6,263
General and undefined merchants & dealers...	16,689	16,091	6,173	5,668	2,647	1,960	49,228
Speculators on chance events	424	284	42	13	38	35	836
Engaged in storage	172	1,093	94	23	71	2	1,455
Total—Class III. ...	67,097	64,632	22,958	17,080	10,280	6,097	188,144
Class IV.—TRANSPORT AND COMMUNICATION—							
Engaged in railway traffic	9,493	9,334	5,342	3,195	4,181	1,155	32,700
„ traffic on roads	13,050	11,233	5,999	2,913	2,327	992	36,514
„ traffic on seas and rivers	15,318	6,317	4,610	5,108	2,997	1,871	36,221
„ postal, telegraph & telephone service	4,433	2,554	1,576	1,036	1,169	421	11,189
Messengers, etc.	528	880	218	339	62	79	2,106
Total—Class IV. ...	42,822	30,318	17,745	12,591	10,736	4,518	118,730
Class V.—INDUSTRIAL—							
Working in art and mechanic productions ...	26,346	20,673	9,407	5,849	3,636	2,368	68,279
„ textile fabrics, dress & fibrous materials	9,451	10,664	3,146	2,492	1,088	1,269	28,110
„ food, drinks, narcotics and stimulants	11,638	10,251	5,308	2,762	1,638	1,133	32,730
„ animal and vegetable substances, N.E.I.	5,546	5,281	2,027	762	1,356	575	15,547
„ metals and other minerals	15,336	14,315	4,712	6,059	2,583	2,051	45,056
„ fuel, light, and other forms of energy...	2,012	1,035	286	239	237	120	3,929
Engaged in construction of buildings, roads, railways, etc.	36,898	27,392	9,877	8,652	5,827	3,924	92,570
Engaged in disposal of the dead, or of refuse	1,278	1,260	276	183	222	86	3,305
„ undefined industrial pursuits ...	14,187	22,636	9,026	7,257	3,015	4,949	61,070
Total—Class V. ...	122,692	113,507	44,065	34,255	19,602	16,475	350,596
Class VI.—PRIMARY PRODUCERS—							
Engaged in agricultural pursuits	75,884	78,534	38,245	33,039	8,322	17,348	251,372
„ pastoral pursuits	47,162	23,325	18,745	4,951	1,983	1,518	97,684
„ capture, etc., of wild animals and their produce	949	1,434	762	296	85	399	3,925
„ fisheries	1,238	915	2,211	553	1,503	158	16,578
„ forestry	2,431	3,821	2,049	109	2,177	525	1,112
„ water conservation and supply ...	2,170	655	557	649	1,176	25	5,232
„ mining and quarrying	38,378	31,428	16,852	6,301	19,835	5,466	118,260
Total—Class VI. ...	168,212	140,112	79,421	45,898	35,081	25,439	494,163
Class VII.—INDEFINITE (of independent means) ...	3,597	7,242	740	180	207	301	12,267
Class VIII.—DEPENDENTS—							
Dependent on natural guardians	245,829	203,227	89,934	62,398	25,660	31,230	658,278
Supported by voluntary & State contributions	8,475	6,556	3,470	1,376	1,170	684	21,731
Criminal class (under legal detention) ...	2,330	1,139	680	320	399	125	4,993
Total—Class VIII. ...	256,634	210,922	94,084	64,094	27,229	32,039	685,002
UNSPECIFIED	1,968	3,479	1,077	1,779	264	225	8,792
Grand Total ...	710,005	603,720	277,003	184,701	112,875	89,624	1,977,928

AUSTRALIAN POPULATION ON 31ST MARCH, 1901, CLASSIFIED ACCORDING TO OCCUPATION.

(*b*) FEMALES.

Occupation. Description.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	Total C'wlth.
Class I.—PROFESSIONAL—							
Engaged in Government, defence, law, etc. ...	110	165	46	29	34	17	401
„ Religion, charity, health, education, etc.	14,419	14,676	4,440	3,456	1,930	1,913	40,834
Total—Class I. ...	14,529	14,841	4,486	3,485	1,964	1,930	41,235
Class II.—DOMESTIC—							
Engaged in supplying board and lodging ...	15,622	14,850	4,530	1,202	3,278	788	40,270
„ Domestic service and attendance ...	37,068	38,826	11,872	13,327	3,652	5,686	110,431
Total—Class II. ...	52,690	53,676	16,402	14,529	6,930	6,474	150,701
Class III.—COMMERCIAL—							
Dealing in property and finance	1,783	2,760	533	496	254	356	6,182
„ Art and mechanic productions ...	564	934	216	168	131	54	2,067
„ Textile fabrics, dress & fibrous materials	2,269	2,452	868	739	376	250	6,954
„ Food, drinks, narcotics and stimulants ...	2,581	3,428	705	374	294	229	7,611
„ Animals & animal & veg. substances, N.E.I.	154	198	34	30	14	16	446
„ Fuel and light	25	34	5	3	2	4	73
„ Metals and other minerals	60	162	11	4	13	10	260
General and undefined merchants and dealers	3,130	4,446	1,139	1,266	433	477	10,891
Speculators on chance events	...	1	13	5	6	4	29
Engaged in storage	1	...	...	...	...	...	1
Total—Class III. ...	10,567	14,415	3,524	3,085	1,523	1,400	34,514
Class IV.—TRANSPORT AND COMMUNICATION—							
Engaged in railway traffic	238	276	172	9	7	39	741
„ Traffic on roads	56	78	21	6	5	7	173
„ Traffic on seas and rivers	107	55	37	21	20	14	254
„ Postal, telegraph and telephone service...	644	782	108	221	223	270	2,248
Messengers, etc.	...	7	3	2	1	...	13
Total—Class IV. ...	1,045	1,198	341	259	256	330	3,429
Class V.—INDUSTRIAL—							
Working in art and mechanic productions ...	1,157	1,748	334	303	95	76	3,713
„ Textile fabrics, dress & fibrous materials	21,644	28,450	6,606	6,243	2,024	2,099	67,066
„ Food, drinks, narcotics and stimulants ...	875	1,402	283	201	74	84	2,919
„ Animal and vegetable substances, N.E.I.	50	85	3	3	1	7	149
„ Metals and other minerals	60	88	6	11	2	1	168
„ Fuel, light, and other forms of energy ...	4	37	1	...	...	...	42
Engaged in construction of buildings, roads, railways, etc.	11	17	...	...	1	2	31
„ Disposal of the dead or of refuse ...	15	24	2	1	...	1	43
„ Undefined industrial pursuits ...	180	855	172	216	11	5	1,439
Total—Class V. ...	23,996	32,706	7,407	6,978	2,208	2,275	75,570
Class VI.—PRIMARY PRODUCERS—							
Engaged in agricultural pursuits	1,735	17,381	2,080	1,147	285	2,074	24,702
„ Pastoral pursuits	2,880	7,569	1,000	2,110	196	363	14,118
„ Capture, etc., of wild animals & their prdce	17	23	2	4	2	15	63
„ Fisheries	3	2	4	...	4	4	17
„ Forestry	1	3	...	2	...	3	9
„ Water conservation and supply ...	2	1	2	...	1	...	6
„ Mining and quarrying	4	19	2	...	3	1	29
Total—Class VI. ...	4,642	24,998	3,090	3,263	491	2,460	38,944
Class VII.—INDEFINITE (of independent means) ...	5,927	2,824	691	213	117	357	10,129
Class VIII.—DEPENDENTS—							
Dependent on natural guardians	525,495	444,840	182,213	144,032	57,035	66,174	1,419,789
Supported by voluntary and State contributions	5,285	5,840	2,024	1,086	492	763	15,490
Criminal class (under legal detention) ...	384	604	107	96	44	5	1,240
Total—Class VIII. ...	531,164	451,284	184,344	145,214	57,571	66,942	1,436,519
UNSPECIFIED	281	1,408	841	1,430	189	683	4,832
Grand Total ...	644,841	597,350	221,136	178,456	71,249	82,851	1,795,873

AUSTRALIAN POPULATION ON 31ST MARCH, 1901, CLASSIFIED ACCORDING TO OCCUPATION.

(c) PERSONS.

Occupation. Description.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	Total C'wlth.
Class I.—PROFESSIONAL—							
Engaged in Government, defence, law, etc.	10,919	6,881	3,846	1,992	2,020	1,329	26,987
,, Ministering to religion, charity, health, education, etc.	30,465	28,340	9,762	6,865	5,047	3,668	84,147
Total—Class I. ...	41,384	35,221	13,608	8,857	7,067	4,997	111,134
Class II.—DOMESTIC—							
Engaged in supplying board and lodging ...	23,880	21,834	7,602	2,684	5,752	1,489	63,241
,, Domestic service and attendance ...	48,938	44,970	16,591	15,297	5,551	6,448	137,795
Total—Class II. ...	72,818	66,804	24,193	17,981	11,303	7,937	201,036
Class III.—COMMERCIAL—							
Dealing in property and finance	10,768	12,799	3,537	2,763	1,736	1,364	32,967
,, Art and mechanic productions ...	4,708	4,654	1,759	978	859	359	13,317
,, Textile fabrics, dress & fibrous matr'ls	9,226	8,826	3,159	2,393	1,345	957	25,906
,, Food, drink, narcotic and stimulants	22,103	21,644	7,347	4,834	2,890	1,530	60,348
,, Animals, & animal veg. substncs, N.E.I.	6,138	4,175	1,583	988	744	345	13,973
,, Fuel and light	2,109	2,828	916	594	478	259	7,184
,, Metals and other minerals ...	2,196	2,206	720	640	556	205	6,523
General & undefined merchants and dealers	19,819	20,537	7,312	6,934	3,080	2,437	60,119
Speculators on chance events	424	285	55	18	44	39	865
Engaged in storage	173	1,093	94	23	71	2	1,456
Total—Class III. ...	77,664	79,047	26,482	20,165	11,803	7,497	222,658
Class IV.—TRANSPORT AND COMMUNICATION—							
Engaged in railway traffic	9,731	9,610	5,514	3,204	4,188	1,194	33,441
,, Traffic on roads	13,106	11,311	6,020	2,919	2,332	999	36,687
,, Traffic on seas and rivers	15,425	6,372	4,647	5,129	3,017	1,885	36,475
,, Postal, telegraph & telephone service	5,077	3,336	1,684	1,257	1,392	691	13,437
Messengers, etc.	528	887	221	341	63	79	2,119
Total—Class IV. ...	43,867	31,516	18,086	12,850	10,992	4,848	122,159
Class V.—INDUSTRIAL—							
Working in art and mechanic productions	27,503	22,421	9,741	6,152	3,731	2,444	71,992
,, Textile fabrics, dress & fibrous matr'ls	31,095	39,114	9,752	8,735	3,112	3,368	95,176
,, Food, drink, narcotics and stimulants	12,513	11,653	5,591	2,963	1,712	1,217	35,649
,, Animal & vegetable substances, N.E.I.	5,596	5,366	2,030	765	1,357	582	15,696
,, Metals and other minerals ...	15,396	14,403	4,718	6,070	2,585	2,052	45,224
,, Fuel, light, and other forms of energy	2,016	1,072	287	239	237	120	3,971
Engaged in construction of buildings, roads, railways, etc....	36,909	27,409	9,877	8,652	5,828	3,926	92,601
,, Disposal of the dead or of refuse ...	1,293	1,284	278	184	222	87	3,348
,, Undefined industrial pursuits ...	14,367	23,491	9,198	7,473	3,026	4,954	62,509
Total—Class V. ...	146,688	146,213	51,472	41,233	21,810	18,750	426,166
Class VI.—PRIMARY PRODUCERS—							
Engaged in agricultural pursuits ...	77,619	95,915	40,325	34,186	8,607	19,422	276,074
,, Pastoral pursuits	50,042	30,894	19,745	7,061	2,179	1,881	111,802
,, Capture, etc., wild anmls & their prdce	966	1,457	764	300	87	414	3,988
,, Fisheries	1,241	917	2,215	553	1,507	162	6,595
,, Forestry	2,432	3,824	2,049	111	2,177	528	11,121
,, Water conservation and supply ...	2,172	656	559	649	1,177	25	5,238
,, Mining and quarrying	38,382	31,447	16,854	6,301	19,838	5,467	118,289
Total—Class VI. ...	172,854	165,110	82,511	49,161	35,572	27,899	533,107
Class VII.—INDEFINITE (of independent means	9,524	10,066	1,431	393	324	658	22,396
Class VIII.—DEPENDENTS—							
Dependent on natural guardians ...	771,324	648,067	272,147	206,430	82,695	97,404	2,078,067
Supported by voluntary & State contributns.	13,760	12,396	5,494	2,462	1,662	1,447	37,221
Criminal class (under legal detention) ...	2,714	1,743	787	416	443	130	6,233
Total—Class VIII. ...	787,798	662,206	278,428	209,308	84,800	98,981	2,121,521
UNSPECIFIED	2,249	4,887	1,918	3,209	453	908	13,624
Grand Total ...	1,354,846	1,201,070	498,129	363,157	184,124	172,475	*3,773,801

* Exclusive of 1533 Half-castes in Queensland, and 553 in South Australia.

4. **Religions.**—Particulars concerning the religious beliefs professed by the population of the Commonwealth at the date of the Census are contained in the attached tables :—

AUSTRALIAN POPULATION ON 31ST MARCH, 1901, CLASSIFIED ACCORDING TO RELIGION.

(a) MALES.

Religion.	New South Wales.	Victoria.	Queensland.	South Aust.	Western Aust.	Tasmania.	Commonwealth.
I. CHRISTIAN—							
Church of England ...	325,440	214,612	100,939	53,794	45,027	43,601	783,413
Methodist	69,349	87,277	24,107	44,254	13,969	12,655	251,611
Presbyterian	69,758	95,916	31,360	9,444	9,252	5,871	221,601
Congregational ...	12,048	8,173	4,076	6,195	2,406	2,705	35,603
Baptist	7,559	15,194	6,174	10,072	1,625	2,038	42,662
Church of Christ ...	1,613	4,980	953	2,714	534	471	11,265
Salvation Army ...	4,515	3,966	2,748	1,902	971	700	14,802
Lutheran	5,282	8,337	14,108	13,915	1,401	291	43,329
Seventh Day Adventist	494	436	197	...	101	183	1,411
Unitarian	499	477	142	326	116	60	1,620
Protestant (undefined)	1,892	4,543	634	1,739	1,206	1,471	11,485
Roman Catholic ...	176,834	126,967	63,240	26,184	24,623	15,656	433,504
Greek Catholic ...	468	277	84	69	170	7	1,075
Catholic (undefined) ...	68	1,835	5	...	840	...	2,748
Other Christians ...	3,026	4,201	2,160	659	323	575	10,944
II. NON-CHRISTIAN—							
Hebrew	3,450	3,051	416	406	755	59	8,137
Mahomedan	1,062	456	16·826	434	1,176	27	34,712
Buddhist	3,590	1,411		3,062	656	339	
Confucian	1,826	3,336			74		
Pagan	184	...			252	1	
Others	931	323	239	128	129	34	1,784
III. INDEFINITE—							
No Denomination ...	3,480	3,861	886	3,619	1,450	324	13,620
Freethinker	2,612	1,618	1,717	438	1,220	258	7,863
Agnostic	271	219	168	39	99	38	834
Others	88	107	341	...	95	7	638
IV. NO RELIGION—							
Atheist...	63	54	61	22	34	11	245
No Religion	1,358	1,864	546	245	1,100	36	5,149
Others	3	2	5	3	4	2	19
V. OBJECT TO STATE—	9,058	6,997	3,424	4,759	2,429	1,776	28,443
VI. UNSPECIFIED—	3,184	3,230	1,452	279	838	428	9,411
Total ...	710,005	603,720	277,003	184,701	112,875	89,624	1,977,928

AUSTRALIAN POPULATION ON 31ST MARCH, 1901, CLASSIFIED ACCORDING TO RELIGION.

(b) FEMALES.

Religion.	New South Wales.	Victoria.	Queensland.	South Aust.	Western Aust.	Tasmania.	Commonwealth.
I. CHRISTIAN—							
Church of England ...	297,691	209,302	83,139	53,193	30,627	40,211	714,163
Methodist	68,289	92,986	22,467	45,871	10,571	12,306	252,490
Presbyterian	62,859	95,543	26,082	8,913	5,455	5,652	204,504
Congregational ...	12,786	8,968	4,224	7,143	1,998	2,839	37,958
Baptist	7,882	17,450	6,071	11,692	1,289	2,292	46,676
Church of Christ ...	1,840	5,702	886	3,389	511	599	12,927
Salvation Army ...	5,070	4,863	2,764	2,128	719	754	16,298
Lutheran	2,105	5,597	11,367	12,225	302	96	31,692
Seventh-Day Adventist	683	650	275	...	110	203	1,921
Unitarian	271	311	70	295	34	28	1,009
Protestant (undefined)	1,443	4,150	355	1,334	641	1,150	9,073
Roman Catholic ...	170,289	133,047	57,152	26,009	15,961	14,658	417,116
Greek Catholic ...	93	90	17	34	2	3	239
Catholic (undefined) ...	95	1,859	8	...	469	...	2,431
Other Christians ...	3,260	4,365	1,807	674	238	535	10,879
II. NON-CHRISTIAN—							
Hebrew	2,997	2,856	317	380	504	48	7,102
Mahomedan	10	11	530	15	15	...	954
Buddhist	40	6		128	105	14	
Confucian	15	53			...		
Pagan	...	...			12	...	
Others	377	79	95	56	28	47	682
III. INDEFINITE—							
No Denomination ...	1,143	2,248	347	1,797	411	191	6,137
Freethinker	427	426	246	76	106	38	1,319
Agnostic	53	41	25	10	7	1	137
Others	42	40	330	...	50	1	463
IV. NO RELIGION—							
Atheist...	5	7	8	2	3	4	29
No Religion	284	542	152	84	266	5	1,333
Others	...	1	...	...	3	...	4
V. OBJECT TO STATE ...	4,010	3,830	1,366	2,734	624	1,124	13,688
VI. UNSPECIFIED ...	782	2,327	1,026	274	188	52	4,649
Total	644,841	597,350	221,126	178,456	71,249	82,851	1,795,873

AUSTRALIAN POPULATION ON 31ST MARCH, 1901, CLASSIFIED ACCORDING TO RELIGION.

(c) PERSONS.

Religion.	New South Wales.	Victoria.	Queensland.	South Aust.	Western Aust.	Tasmania.	Commonwealth.
1. CHRISTIAN—							
Church of England	623,131	423,914	184,078	106,987	75,654	83,812	1,497,576
Methodist	137,638	180,263	46,574	90,125	24,540	24,961	504,101
Presbyterian ...	132,617	191,459	57,442	18,357	14,707	11,523	426,105
Congregational ...	24,834	17,141	8,300	13,338	4,404	5,544	73,561
Baptist	15,441	32,644	12,245	21,764	2,914	4,330	89,338
Church of Christ ...	3,453	10,682	1,839	6,103	1,045	1,070	24,192
Salvation Army ...	9,585	8,829	5,512	4,030	1,690	1,454	31,100
Lutheran	7,387	13,934	25,470	26,140	1,703	387	75,021
7th Day Adventist	1,177	1,086	472	...	211	386	3,332
Unitarian	770	788	212	621	150	88	2,629
Protesta't (undefined)	3,335	8,693	989	3,073	1,847	2,621	20,558
Roman Catholic ...	347,123	260,014	120,392	52,193	40,584	30,314	850,620
Greek Catholic ...	567	367	101	103	172	10	1,314
Catholic (undefined)	163	3,694	13	...	1,309	...	5,179
Other Christians ...	6,286	8,566	3,967	1,333	561	1,110	21,823
II. NON-CHRISTIAN—							
Hebrew	6,447	5,907	733	786	1,259	107	15,239
Mahomedan ...	1,072	467	17,356	449	1,191	27	35,666
Buddhist	3,630	1,417		3,190	761	353	
Confucian	1,841	3,389			74		
Pagan	184	...			264	1	
Others	1,308	402	334	184	157	81	2,466
III. INDEFINITE—							
No Denomination...	4,623	6,109	1,233	5,416	1,861	515	19,757
Freethinker ...	3,039	2,044	1,963	514	1,326	296	9,182
Agnostic	324	260	193	49	106	39	971
Others	130	147	671	...	145	8	1,101
IV. NO RELIGION—							
Atheist	68	61	69	24	37	15	274
No Religion ...	1,642	2,406	698	329	1,366	41	6,482
Others	3	3	5	3	7	2	23
V. OBJECT TO STATE	13,068	10,827	4,790	7,493	3,053	2,900	42,131
VI. UNSPECIFIED	3,966	5,557	2,478	553	1,026	480	14,060
Total ...	1,354,846	1,201,070	498,129	363,157	184,124	172,475	3,773,801

5. **Conjugal Condition.**—In the following tables particulars are given relative to the conjugal condition of the population of the Commonwealth at the date of the Census. In the case of South Australia divorced persons, and persons whose conjugal condition was unspecified, were, in the Census tabulation, included under other heads. The figures given in these tables are exclusive of 1533 half-castes in Queensland and 553 in South Australia, whose ages and conjugal condition were unspecified.

AUSTRALIAN POPULATION CLASSIFIED ACCORDING TO CONJUGAL CONDITION AND AGE.

(i.) MARRIED.

(*a*) MALES.

Age.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	W. Aust.	Tas.	Total C'wealth.
Under 15	2	...	...	...	...	...	2
15 and under 20 ...	142	89	32	89	16	20	338
20 ,, 21 ...	335	156	78	102	39	35	745
21 ,, 25 ...	6,580	4,006	1,988	1,395	886	841	15,696
25 ,, 30 ...	21,196	14,987	7,404	5,063	4,501	2,678	55,829
30 ,, 35 ...	29,825	25,872	11,051	7,647	6,530	3,837	84,762
35 ,, 40 ...	34,469	32,088	13,291	8,275	6,557	4,310	98,990
40 ,, 45 ...	31,136	27,127	11,257	8,459	4,896	3,976	86,851
45 ,, 50 ...	23,520	17,864	7,933	6,895	3,121	2,949	62,282
50 ,, 55 ...	17,511	13,240	5,991	5,113	2,050	2,174	46,079
55 ,, 60 ...	13,704	11,014	4,997	4,107	1,433	1,517	36,772
60 ,, 65 ...	10,343	9,605	6,313	2,926	967	1,220	51,991
65 ,, 70 ...	7,497	9,597		2,091	554	878	
70 ,, 75 ...	3,894	6,362	1,557	1,485	283	666	19,939
75 ,, 80 ...	1,661	2,755		762	133	381	
80 ,, 85 ...	715	930	218	315	56	231	3,067
85 and upwards ...	202	228		80	12	80	
Unspecified Adults ...	190	240	103	...	29	14	576
Total	202,922	176,160	72,213	54,754	32,063	25,807	563,919

(*b*) FEMALES.

Age.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	W. Aust.	Tas.	Total C'wealth.
Under 15	2	...	...	...	...	...	2
15 and under 20 ...	2,562	1,045	804	368	344	332	5,455
20 ,, 21 ...	2,275	1,200	788	447	376	301	5,387
21 ,, 25 ...	17,316	11,441	6,156	3,644	2,704	2,126	43,387
25 ,, 30 ...	32,548	25,340	11,546	7,474	5,920	3,773	86,601
30 ,, 35 ...	34,574	31,905	12,861	8,791	5,936	3,977	98,044
35 ,, 40 ...	33,083	31,869	11,653	8,722	4,434	4,114	93,875
40 ,, 45 ...	26,887	25,030	9,092	7,649	2,803	3,588	75,049
45 ,, 50 ...	18,735	15,711	6,024	5,697	1,715	2,358	50,240
50 ,, 55 ...	14,068	11,774	4,512	4,178	1,214	1,654	37,400
55 ,, 60 ...	10,178	9,128	3,454	3,114	740	1,228	27,842
60 ,, 65 ...	6,838	7,538	3,620	2,334	458	914	34,239
65 ,, 70 ...	4,244	5,928		1,515	253	597	
70 ,, 75 ...	1,707	3,048	754	883	88	304	9,093
75 ,, 80 ...	671	1,129		361	33	115	
80 ,, 85 ...	231	351	89	128	9	56	1,044
85 and upwards ...	66	64		36	2	12	
Unspecified Adults ...	201	340	116	...	14	11	682
Total	206,186	182,841	71,469	55,341	27,043	25,460	568,340

AUSTRALIAN POPULATION CLASSIFIED ACCORDING TO CONJUGAL CONDITION AND AGE.

(ii) NEVER MARRIED.

(*a*) MALES.

Age.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	W. Aust.	Tas.	Total C'wealth.
Under 15	246,354	206,713	92,227	65,209	26,845	32,511	669,859
15 and under 20 ...	70,278	58,791	23,646	19,968	7,072	9,368	189,123
20 „ 21 ...	12,411	10,271	4,748	3,513	1,915	1,608	34,466
21 „ 25 ...	42,926	35,908	17,731	11,611	8,949	5,737	122,862
25 „ 30 ...	34,523	30,061	16,045	8,637	11,171	4,521	104,958
30 „ 35 ...	21,835	19,881	11,252	5,105	8,044	2,448	68,565
35 „ 40 ...	16,346	13,259	8,256	3,442	5,486	1,734	48,523
40 „ 45 ...	11,821	8,363	6,461	2,509	3,376	1,063	33,593
45 „ 50 ...	7,752	4,803	4,396	1,682	1,729	546	20,908
50 „ 55 ...	5,798	3,404	3,403	1,157	1,035	366	15,163
55 „ 60 ...	3,741	2,579	2,129	695	578	254	9,976
60 „ 65 ...	3,897	3,054	2,750	475	496	255	17,822
65 „ 70 ...	2,997	3,166		250	331	151	
70 „ 75 ...	1,793	2,207	692	182	205	132	7,254
75 „ 80 ...	763	1,011		80	85	104	
80 „ 85 ...	378	482	115	40	24	52	1,397
85 and upwards ...	139	128		11	6	22	
Unspecified Adults ...	498	581	2,788	...	109	45	4,021
Total	484,250	404,662	196,639	124,566	77,456	60,917	1,348,490

(*b*) FEMALES.

Age.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	W. Aust.	Tas.	Total C'wealth.
Under 15	240,638	202,650	90,205	64,028	26,425	31,514	655,460
15 and under 20 ...	68,123	58,665	21,971	19,791	5,502	8,728	182,780
20 „ 21 ...	11,143	10,422	3,572	3,269	901	1,506	30,813
21 „ 25 ...	33,757	34,299	10,594	10,134	3,248	4,188	96,220
25 „ 30 ...	22,562	26,751	6,453	6,615	2,605	2,708	67,694
30 „ 35 ...	10,529	14,799	2,553	3,293	1,104	1,456	33,734
35 „ 40 ...	6,000	9,114	1,278	1,901	568	828	19,689
40 „ 45 ...	3,546	5,416	738	1,175	279	549	11,703
45 „ 50 ...	2,062	2,772	369	713	169	342	6,427
50 „ 55 ...	1,446	1,620	278	418	86	285	4,133
55 „ 60 ...	929	1,004	169	289	51	161	2,603
60 „ 65 ...	660	758	202	213	29	134	3,231
65 „ 70 ...	399	631		113	14	78	
70 „ 75 ...	215	353	52	91	5	45	1,145
75 „ 80 ...	97	206		52	5	24	
80 „ 85 ...	54	121	13	17	3	8	295
85 and upwards ...	22	33		10	2	12	
Unspecified Adults ...	144	312	77	...	8	5	546
Total	402,326	369,926	138,524	112,122	41,004	52,571	1,116,473

AUSTRALIAN POPULATION CLASSIFIED ACCORDING TO CONJUGAL CONDITION AND AGE.

(iii.) WIDOWED.

(a) MALES.

Age.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	W. Aust.	Tas.	Total C'wealth.
Under 15	...	...	...	...	...	...	...
15 and under 20 ...	2	2	3	...	...	...	7
20 " 21 ...	5	2	2	3	3	1	16
21 " 25 ...	60	50	16	17	14	14	171
25 " 30 ...	343	202	136	71	95	46	893
30 " 35 ...	685	636	263	193	216	102	2,095
35 " 40 ...	1,217	1,142	473	296	352	170	3,650
40 " 45 ...	1,729	1,432	626	403	409	207	4,806
45 " 50 ...	1,885	1,313	684	456	348	231	4,917
50 " 55 ...	2,139	1,557	762	497	343	237	5,535
55 " 60 ...	2,096	1,654	830	534	290	214	5,618
60 " 65 ...	2,394	2,201	1,816	591	294	245	14,189
65 " 70 ...	2,446	3,211		531	211	249	
70 " 75 ...	2,038	3,140	926	615	201	308	11,078
75 " 80 ...	1,140	1,926		448	72	264	
80 " 85 ...	782	1,029	259	291	59	175	3,727
85 and upwards ...	452	412		156	17	95	
Unspecified Adults ...	38	64	16	...	8	2	128
Total ...	19,451	19,973	6,812	5,102	2,932	2,560	56,830

(b) FEMALES.

Age.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	W. Aust.	Tas.	Total C'wealth.
Under 15	...	...	...	...	...	...	...
15 and under 20 ...	10	2	8	3	1	2	26
20 " 21 ...	20	5	3	11	...	1	40
21 " 25 ...	179	128	56	35	36	25	459
25 " 30 ...	782	611	267	164	128	67	2,019
30 " 35 ...	1,408	1,312	533	284	247	130	3,914
35 " 40 ...	2,317	2,247	767	590	305	256	6,482
40 " 45 ...	2,872	3,011	869	772	298	310	8,132
45 " 50 ...	3,126	3,256	1,002	867	266	380	8,897
50 " 55 ...	3,771	4,136	1,245	977	376	429	10,934
55 " 60 ...	4,236	4,975	1,289	1,142	385	487	12,514
60 " 65 ...	4,667	5,945	2,529	1,479	420	664	29,871
65 " 70 ...	4,571	7,229		1,423	303	641	
70 " 75 ...	3,257	4,926	1,271	1,306	183	551	17,755
75 " 80 ...	2,066	2,878		849	95	373	
80 " 85 ...	1,284	1,583	367	553	44	235	5,705
85 and upwards ...	584	650		264	21	120	
Unspecified Adults ...	57	127	12	...	4	1	201
Total ...	35,207	43,021	10,218	10,719	3,112	4,672	106,949

AUSTRALIAN POPULATION CLASSIFIED ACCORDING TO CONJUGAL CONDITION AND AGE.

(iv.) DIVORCED.

(*a*) MALES.

Age.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	W. Aust.	Tas.	Total C'wealth.
Under 15	...	...	...		...	...	...
15 and under 20 ...	...	...	...		...	...	...
20 ,, 21 ...	...	...	...		...	...	...
21 ,, 25 ...	11	1	1		6	2	21
25 ,, 30 ...	46	15	6		9	1	77
30 ,, 35 ...	95	29	19		18	5	166
35 ,, 40 ...	151	54	18		25	10	258
40 ,, 45 ...	124	52	26		23	6	231
45 ,, 50 ...	93	36	6		11	7	153
50 ,, 55 ...	80	30	5		13	2	130
55 ,, 60 ...	41	25	7		2	1	76
60 ,, 65 ...	28	18	10		2	...	88
65 ,, 70 ...	13	15			2	...	
70 ,, 75 ...	6	6	2		...	1	21
75 ,, 80 ...	3	3			...	...	
80 ,, 85 ...	...	2	1		...	...	4
85 and upwards ...	...	1			...	...	
Unspecified Adults ...	1	2	...		...	...	3
Total	692	289	101		111	35	1,228

(*b*) FEMALES.

Age.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	W. Aust.	Tas.	Total C'wealth.
Under 15	...	...	...		...	...	...
15 and under 20 ...	2	...	...		...	...	2
20 ,, 21 ...	2	2	1		...	...	5
21 ,, 25 ...	37	8	3		2	1	51
25 ,, 30 ...	106	36	11		12	2	167
30 ,, 35 ...	155	65	10		8	4	242
35 ,, 40 ...	172	94	3		10	6	285
40 ,, 45 ...	110	49	6		7	5	177
45 ,, 50 ...	63	34	5		1	3	106
50 ,, 55 ...	28	19	3		2	...	52
55 ,, 60 ...	20	6	2		...	...	28
60 ,, 65 ...	4	6	...		...	1	11
65 ,, 70 ...	6	4	...		...	...	10
70 ,, 75 ...	3	2	...		...	...	5
75 ,, 80 ...	...	...	...		...	...	...
80 ,, 85 ...	...	1	...		...	...	1
85 and upwards ...	...	...	...		...	...	...
Unspecified Adults ...	...	5	...		...	...	5
Total	708	331	44		42	22	1,147

AUSTRALIAN POPULATION CLASSIFIED ACCORDING TO CONJUGAL CONDITION AND AGE.

(v.) NOT STATED.

(*a*) MALES.

Age.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	W. Aust.	Tas.	Total C'wealth.
Under 15	...	...	...		...	...	...
15 and under 20 ...	1	...	3		...	...	4
20 " 21 ...	3	...	2		...	...	5
21 " 25 ...	117	185	24		29	23	378
25 " 30 ...	165	193	43		46	30	477
30 " 35 ...	156	210	54		37	30	487
35 " 40 ...	152	172	45		21	38	428
40 " 45 ...	120	137	49		18	21	345
45 " 50 ...	88	110	27		11	27	263
50 " 55 ...	87	106	26		12	18	249
55 " 60 ...	52	65	18		8	10	153
60 " 65 ...	71	94	25		8	9	364
65 " 70 ...	52	88			3	14	
70 " 75 ...	41	62	12		3	16	189
75 " 80 ...	11	37			...	7	
80 " 85 ...	8	9	3		1	1	38
85 and upwards ...	7	6			1	2	
Unspecified Adults ...	1,559	1,162	134		115	59	3,029
Total ...	2,690	2,636	465		313	305	6,409

(*b*) FEMALES.

Age.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	W. Aust.	Tas.	Total C'wealth.
Under 15	...	...	...		...	...	...
15 and under 20 ...	39	...	9		2	1	51
20 " 21 ...	17	...	4		1	1	23
21 " 25 ...	72	113	9		11	...	205
25 " 30 ...	45	84	7		12	11	159
30 " 35 ...	31	69	1		3	9	113
35 " 40 ...	21	64	4		5	13	107
40 " 45 ...	21	40	5		4	15	85
45 " 50 ...	15	31	2		...	11	59
50 " 55 ...	14	40	4		...	11	69
55 " 60 ...	13	43	4		1	9	70
60 " 65 ...	23	41	6		1	12	155
65 " 70 ...	17	50			...	5	
70 " 75 ...	20	30	10		3	10	103
75 " 80 ...	10	18			...	2	
80 " 85 ...	5	9	1		...	3	30
85 and upwards ...	6	3			...	3	
Unspecified Adults ...	45	596	45		5	10	701
Total ...	414	1,231	111		48	126	1,930

§ 10. Naturalisation.

1. **The Commonwealth Act.**—The Commonwealth Constitution empowers the Commonwealth Parliament to make laws with respect to "Naturalisation and Aliens," a power which was exercised when the "Naturalisation Act of 1903" was passed. Assented to on 13th October of that year, this Act came into force on 1st January, 1904, in accordance with a proclamation by gazette of 14th November, 1903.

Prior to the passing of this Act the issue of certificates of naturalisation had been a function of the State Governments, carried out under Acts of the several State Legislatures, which, however, did not differ materially from each other, and furnished the basis on which the Commonwealth Act was drafted. From 1st January, 1904, when the Act became operative, the right to issue certificates of naturalisation in the Commonwealth has been vested exclusively in the Federal Government, but all certificates or letters of naturalisation issued under the several State Acts prior to that date entitle the recipients to be deemed to be naturalised under the Commonwealth Act.

The grant of a certificate of naturalisation entitles the recipient within the limits of the Commonwealth to all the rights and privileges, and renders him subject to all the obligations, of a natural-born British subject, with the exception that where, by any Commonwealth or State Constitution or Act, a distinction is made between natural-born British subjects and naturalised persons, such distinction shall hold good in the case of all persons naturalised under the Commonwealth Act.

Application for certificate of naturalisation must be made to the Governor-General, the qualifications required in an applicant being:—

(i.) That he is not a British subject.
(ii.) That he is not an aboriginal native of Asia, Africa, or the Islands of the Pacific, excepting New Zealand.
(iii.) That he intends to settle in the Commonwealth.
(iv.) (*a*) That he has resided in Australia continuously for two years immediately preceding naturalisation; or
  (*b*) That he has obtained in the United Kingdom a certificate or letters of naturalisation.

An applicant who has already obtained a certificate or letters of naturalisation in the United Kingdom is required to furnish, in support of his application—

(i.) His certificate or letters of naturalisation.
(ii.) His statutory declaration—
  (*a*) That he is the person named therein.
  (*b*) That he obtained the certificate or letters without fraud or intentional false statement.
  (*c*) That the signature and seal thereto are, to the best of his knowledge and belief, genuine.
  (*d*) That he intends to settle in the Commonwealth.

If the applicant is not already naturalised in the United Kingdom the particulars which he is required to furnish in support of his application are as follows:—

(i.) His own statutory declaration stating—
  (*a*) Name; (*b*) Age; (*c*) Birthplace; (*d*) Occupation; (*e*) Residence; (*f*) Length of residence in Australia; (*g*) Intention to settle in the Commonwealth.
(ii.) A certificate signed by a Justice of the Peace, a postmaster, a teacher of a State school, or an officer of police, that the applicant is known to him and is of good repute.

In connection with any application for naturalisation, the Governor-General in Council is authorised to grant or withhold a certificate as he thinks most conducive to the public good, but the issue of a certificate to any person who is not already naturalised in the United Kingdom is not admissible until the applicant has taken an oath or affirmation of allegiance. The grant of a certificate is made free of charge.

In addition to naturalisation by grant of certificate, the Act makes provision for—

(i.) Naturalisation by marriage.
(ii.) Naturalisation by residence with naturalised parent.

The former relates to the case of a woman who is not herself a British subject, but is married to a British subject; the latter to that of an infant who is not a natural-born British subject, but who has resided at any time in Australia with a father or mother who is a naturalised British subject. In each instance the person concerned is deemed to be naturalised under the Commonwealth Act.

The administration of the Act is carried out by the Department of External Affairs, and the Governor-General is authorised to make such regulations as are necessary or convenient for giving effect to the Act. Up to the present, however, no such regulations have been issued.

2. **Statistics of Naturalisation.**—Particulars relative to the nationalities of the recipients of certificates of naturalisation issued under the Act during each of the three years 1904, 1905, and 1906 are contained in section (A) of the following table. Tabulated according to the countries from which the recipients of certificates had come, the Commonwealth statistics of naturalisation for 1904, 1905 and 1906, are as shewn in section (B) of the following table. Corresponding particulars as to certificates issued under the State Acts during the years 1901 to 1903 are not available in such detail as to admit of comparison.

COMMONWEALTH CERTIFICATES GRANTED, 1904 TO 1906.

(a) Nationalities of Recipients.	No. of Certificates Granted.		
	1904.	1905.	1906.
German ...	687	379	446
Swedish ...	311	120	144
Italian ...	193	103	95
Danish ...	145	82	92
Russian ...	222	77	89
Norwegian ...	158	69	73
Greek ...	76	61	52
America(North)	32	15	42
Austrian ...	67	65	40
French ...	82	47	35
Swiss ...	42	23	24
Dutch ...	24	13	12
Belgian ...	8	4	10
Spanish ...	9	6	10
Portuguese ...	13	14	8
Roumanian ...	20	7	6
Servian ...	...	...	2
America(South)	7	...	2
Turkish ...	9	28	1
Armenian ...	...	...	1
Brazilian ...	...	1	1
Chilian ...	...	...	1
Cuban ...	...	1	1
America(Centrl)	...	1	...
Icelandic ...	...	1	...
Timorian ...	...	1	...
Bulgarian ...	2	...	...
Total ...	2,107	1,118	1,187

(b) Countries from which recipients of Commonwealth certificates had come.	No. of Certificates Granted.		
	1904.	1905.	1906.
Germany ...	502	318	360
Great Britain	567	213	231
Italy ...	166	97	82
America(North)	165	51	78
Sweden ...	86	42	64
Denmark ...	73	47	55
Norway ...	73	39	41
New Zealand...	49	17	26
Greece ...	30	26	22
France ...	65	35	21
Port Said ...	32	23	20
Switzerland ...	24	16	19
South Africa ...	36	17	19
Austria ...	22	45	17
Belgium ...	24	...	17
Russia ...	16	...	13
Finland ...	19	...	10
Syria ...	22	11	...
Turkey ...	...	25	...
China ...	15	...	...
Holland ...	13	...	...
Mauritius ...	14	...	...
Poland ...	11	...	...
Other Countries	83	96	92
Total ...	2,107	1,118	1,187

The following table furnishes particulars concerning the States in which the recipients of Commonwealth certificates of naturalisation during 1904, 1905, and 1906 were resident. The numbers of certificates granted under the several State Acts during the years 1901, 1902, and 1903 are also given.

NATURALISATION CERTIFICATES GRANTED, 1901 TO 1906.

STATE.	Number of Certificates Granted.					
	1901.	1902.	1903.	1904.	1905.	1906.
New South Wales	507	386	400	1,379	544	475
Victoria	574	500	397	319	213	301
Queensland	449	375	355	115	150	177
South Australia	109	54	43	25	34	45
Western Australia	58	111	75	248	166	150
Tasmania	70	28	149	21	11	39
Commonwealth	1,767	1,454	1,419	2,107	1,118	1,187

3. **Census Particulars.**—In the Census Schedule drafted by the Statistical Conference of 1900, provision was made for the inclusion of particulars concerning the number of persons who had become British subjects by naturalisation. This information was obtained in all the States except Queensland, the particulars being as follows:—

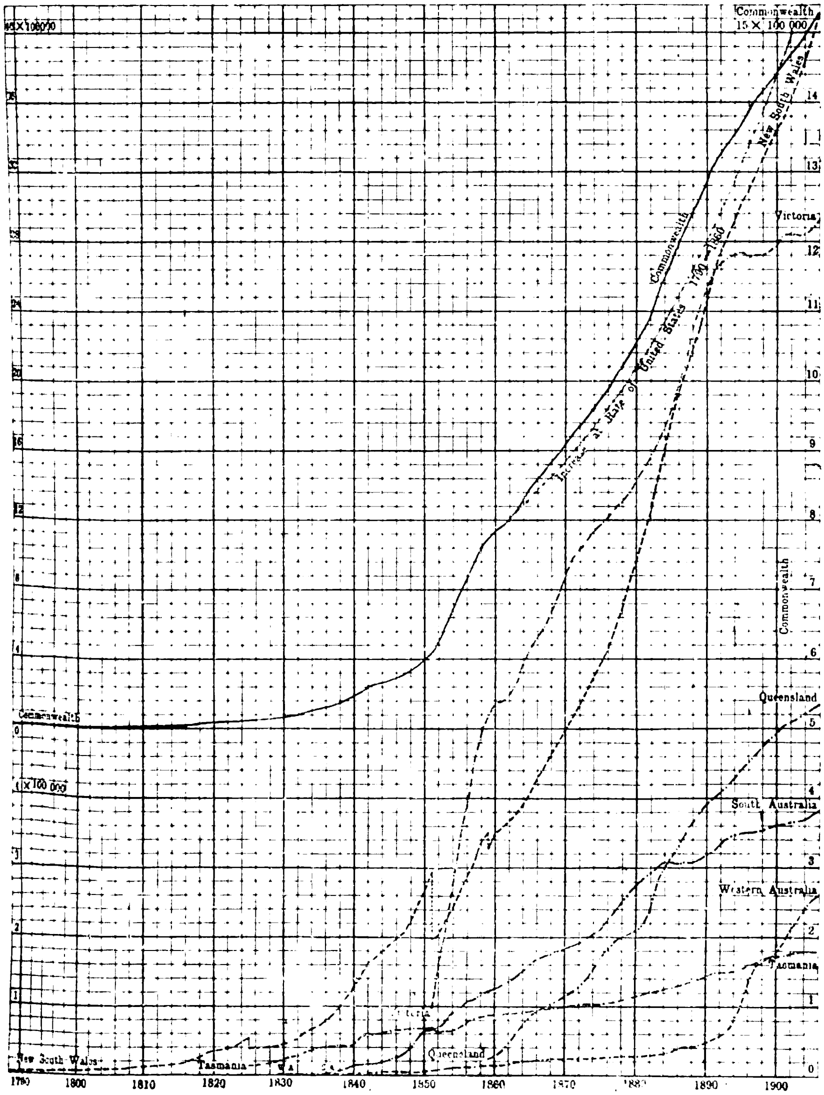
NUMBER OF NATURALISED BRITISH SUBJECTS RECORDED AT THE AUSTRALIAN CENSUS OF 1901.

Particulars.	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tasmania.	C'wealth.[2]
Males	3,265	3,304	[1]	1,360	576	119	8,624
Females ...	354	1,262	[1]	545	101	24	2,286
Persons ...	3,619	4,566	[1]	1,905	677	143	10,910

1. Not ascertained. 2. Exclusive of Queensland.

It is probable that the numbers furnished above fall short of the total number of naturalised persons at the date of the census, as the method of recording the fact of naturalisation on the schedule was that of inserting the letter N after the birthplace, a method which is always liable to lead to errors of omission. Cases also of women who had become naturalised by marriage to British subjects, would probably remain unrecorded in many instances.

GRAPHS OF TOTAL POPULATION OF THE COMMONWEALTH OF AUSTRALIA AND EACH STATE THEREIN, 1788-1906



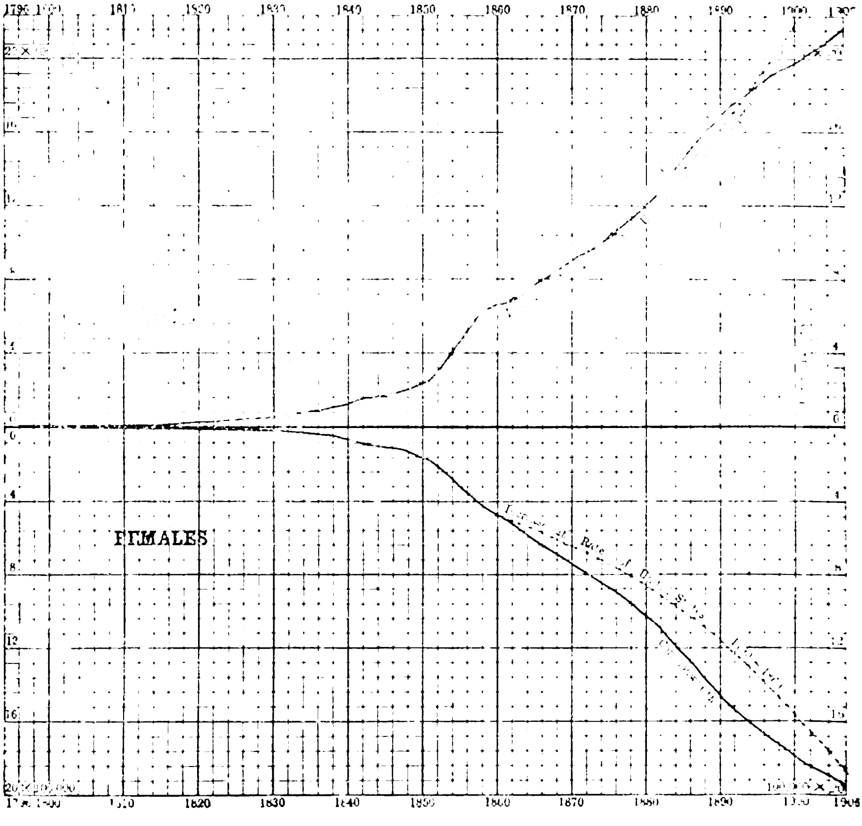
Explanation of Graphs.—The base of each small square represents two years' interval, for both States and Commonwealth; and the vertical height 80,000 persons for Commonwealth or 20,000 for States The zero line for the States is the bottom line; for the Commonwealth it is the line marked "Commonwealth," with 0 written below. The scale on the right and that below the Commonwealth zero line on the left relate to the States, that above the Commonwealth zero line on the left relates to the Commonwealth.

Where the population falls suddenly the fall denotes the creation of a new colony, *e.g.*, New South Wales 1825, loses the whole population of Tasmania, then erected into a separate colony.

The curves are as follows:—Commonwealth, an unbroken line; New South Wales, — — — —; Victoria, — - — - — -; Queensland, - - - - - - - - - -; South Australia, — - - — - - — -; Western Australia, — - — - — - — -; Tasmania, — — - — — - -; the names on the curves also shew which State each represents.

The manner in which the population of the Commonwealth would have grown from 1860 to 1906 if, during that period there had been in operation the rate of increase actually experienced in the United States from 1790 to 1860, is shewn for purposes of comparison.

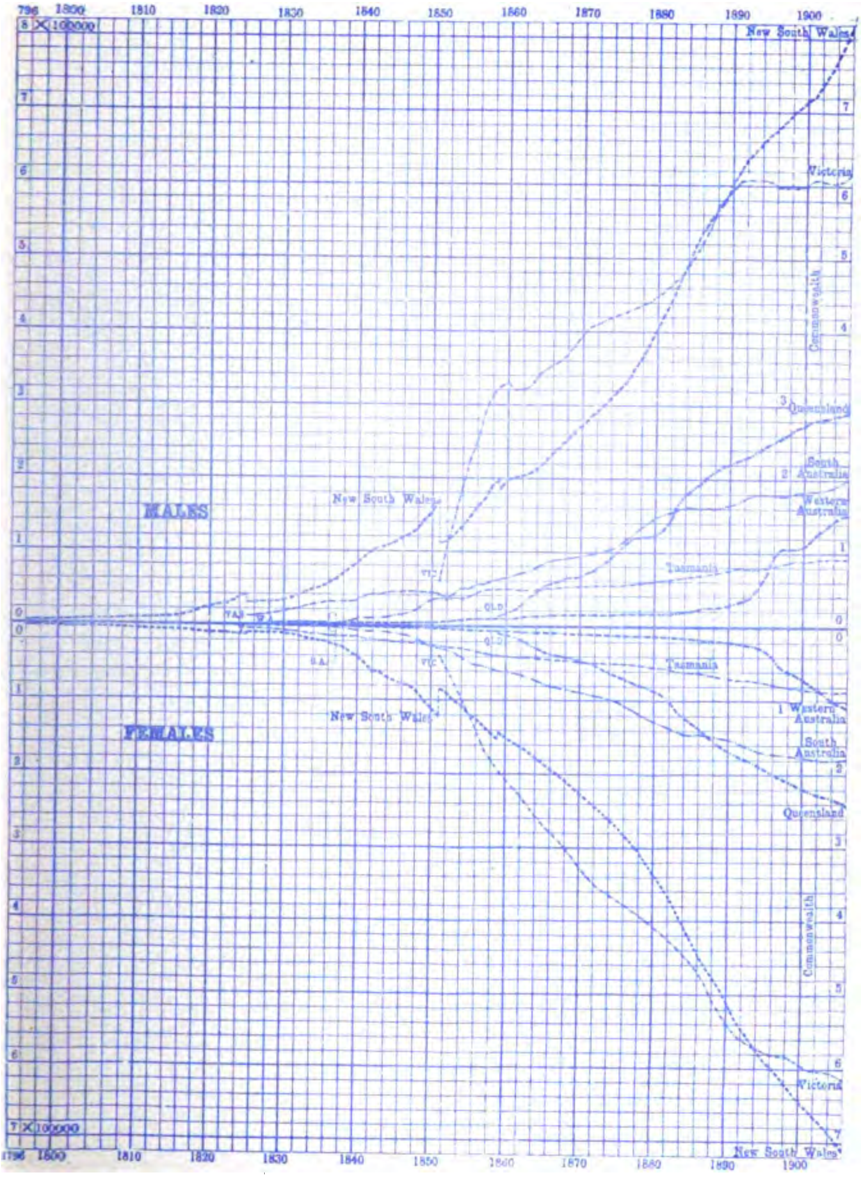
GRAPHS OF MALE AND FEMALE POPULATIONS, COMMONWEALTH OF AUSTRALIA, 1796-1906.



EXPLANATION OF GRAPHS.—The base of each small square represents two years' interval, and the vertical height 80,000 persons. The distances upward from the heavy zero line denote the number of males, and downward the number of females. From 1860 onward is shewn, for purposes of comparison, the manner in which the numbers of each sex in the Commonwealth would have grown from 1860 to 1906 if, during that period, there had been in operation the rate of increase actually experienced in the United States from 1790 to 1860.

The asymmetry of the two graphs reveals the want of uniformity in the increase of the two sexes.

GRAPHS OF MALE AND FEMALE POPULATION OF THE STATES OF AUSTRALIA, 1796-1906



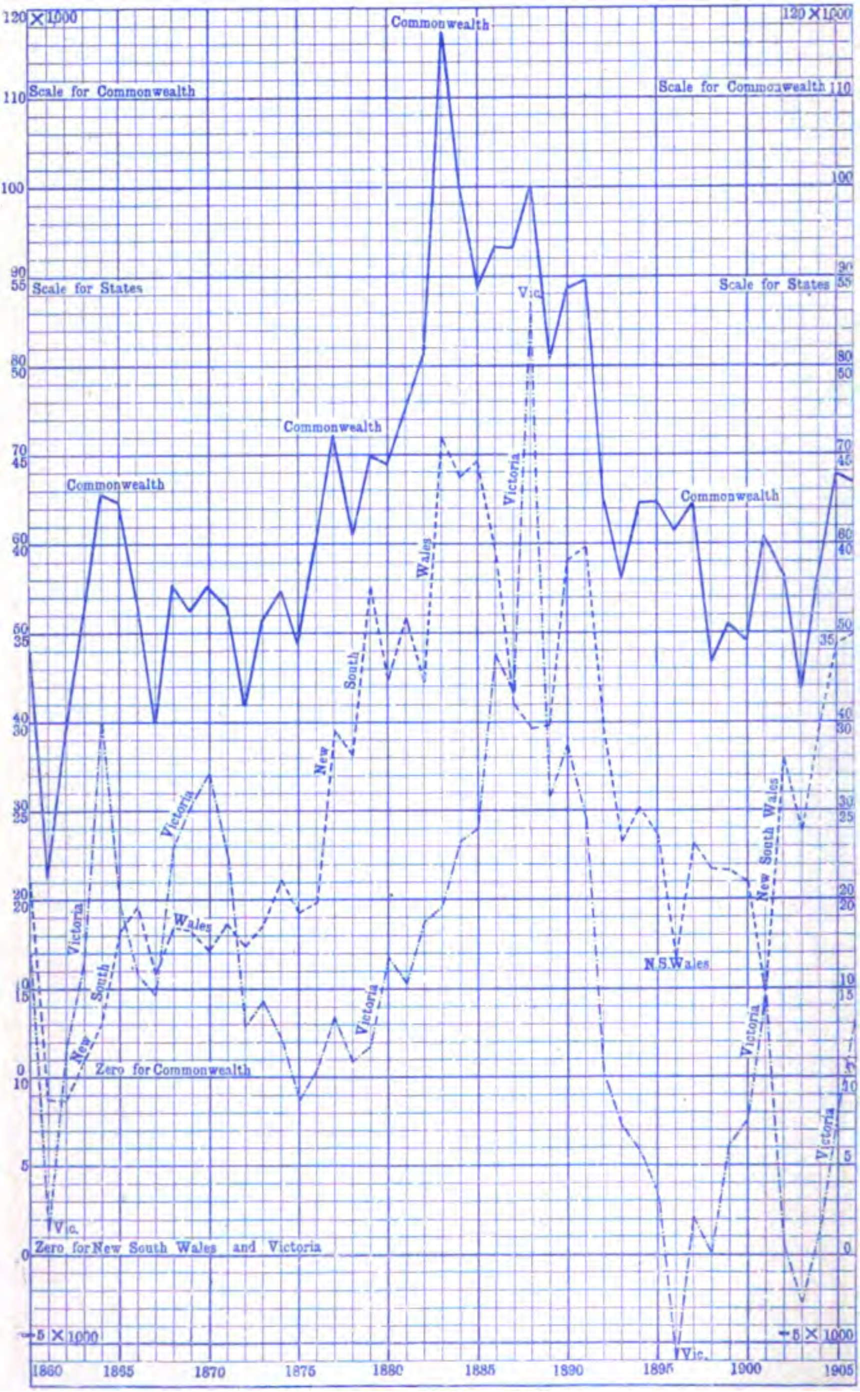
Explanation of Graphs.—The base of each small square represents two years' interval, and the vertical height 20,000 persons. The distances upward from the zero line represent the number of males, and downward the number of females.

The sudden falls denote the creation of new colonies.

The names on the curves denote the States to which they refer, and the curves are as follows:—New South Wales, ———; Victoria, —·——; Queensland, ——------; South Australia, —·—·—·—; Western Australia, ———·———-; Tasmania, ——·—·—·.

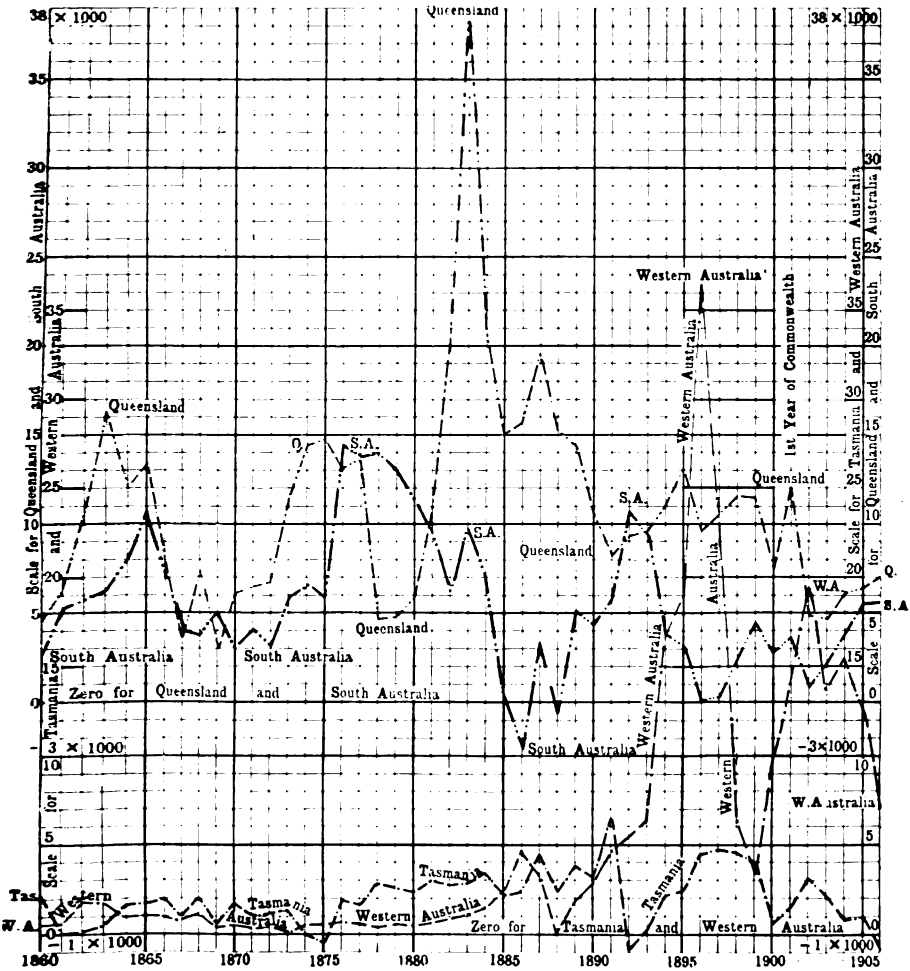
The asymmetry of the two series of graphs reveals the want of uniformity in the increase of the two sexes.

GRAPHS SHEWING NET INCREASE OF POPULATION OF THE COMMONWEALTH OF AUSTRALIA AND THE STATES OF NEW SOUTH WALES AND VICTORIA 1860-1906.



(For explanation see foot of next page.)

GRAPHS SHEWING NET INCREASE OF POPULATION OF THE STATES OF QUEENSLAND, SOUTH AUSTRALIA, WESTERN AUSTRALIA, AND TASMANIA.



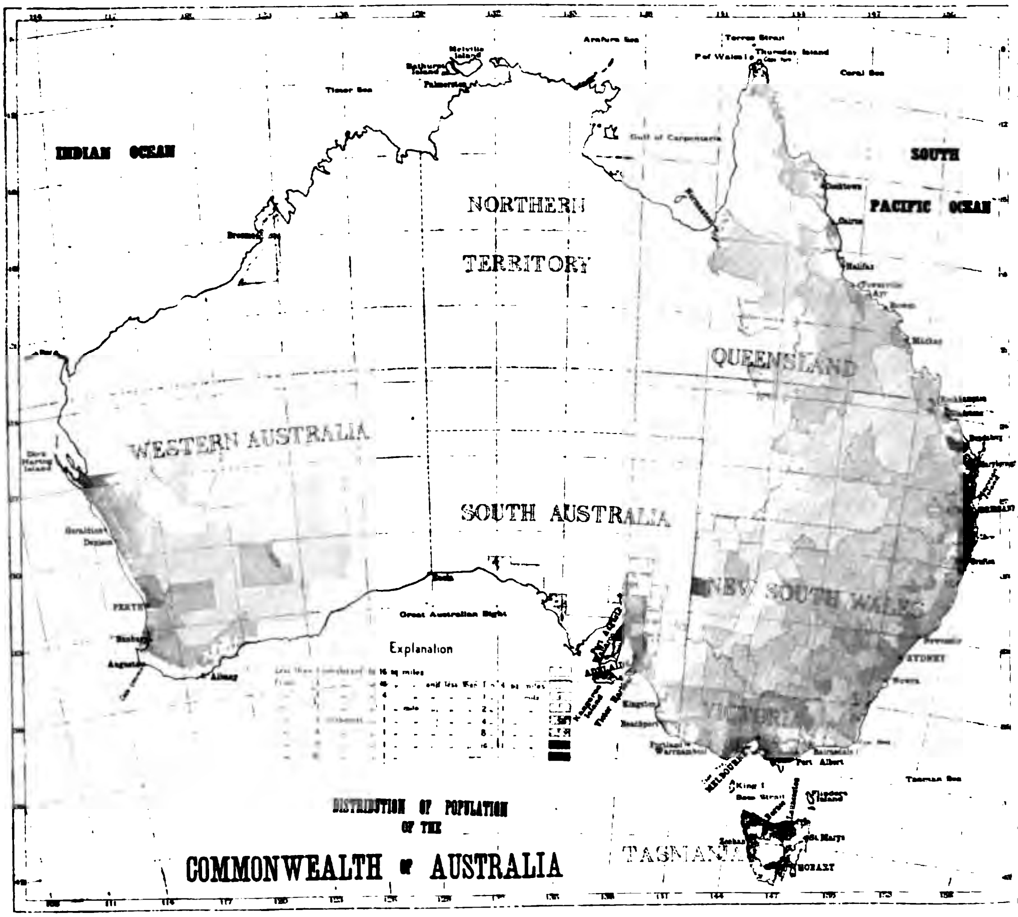
Explanation of Graphs shewing Net Increase.—The base of each small square represents an interval of a year for both States and Commonwealth; the vertical height represents 2000 for the Commonwealth and 1000 for the States. Four zero lines are taken, viz.—(i.) For the Commonwealth; (ii.) for New South Wales and Victoria; (iii.) for Queensland and South Australia; and (iv.) for Tasmania and Western Australia. These are indicated on the graphs.

Net Decreases in population are shewn by carrying the graph in such cases below the zero line, the distance of the graph below the zero line indicating the extent of the decrease.

The lines used are as follows:—Commonwealth, an unbroken line; New South Wales — — — — — —; Victoria — - — - — - — - —; Queensland — — - - — — - - — —; South Australia — - - - - - - —; Western Australia — — — — — — — — —; Tasmania — — - - — — —.

The names given on the diagram also indicate which State each graph represents.

DENSITY OF POPULATION THROUGHOUT THE COMMONWEALTH OF AUSTRALIA ACCORDING TO CENSUS OF 1901.



This map furnishes a graphic representation of the distribution of the population of the Commonwealth at the date of the last Census, 1901. For this purpose the density of the population of variously constituted districts in each State has been computed, and the areas representing those have been shaded in accordance with the scale of density given at the foot of the map. The districts dealt with in the several States are as follows:- New South Wales, Counties; Victoria, Counties; Queensland, Census Districts; South Australia, Counties; Western Australia, Magisterial Districts; Tasmania, Electoral Districts.

This map must be considered as furnishing only a rough approximation to the true distribution of the population, owing to the fact that a small densely populated area may exist in certain cases within a comparatively large district, the balance of which is sparsely populated. Thus, in such a case, owing to the density of the whole being alone taken into account, the fact of a concentration of population within a small area is lost for purposes of representation.

The concentration of population about the capitals, referred to in § 6, page 158, is obvious on reference to the above map.

§ 11. Graphical Representation of Growth of Population.

1. **General.**—The nature of the fluctuations of the numbers representing *(a)* total population, or those representing *(b)* births and deaths from year to year, or *(c)* the natural increase, *i.e.*, the difference of births and deaths, or *(d)* the net immigration, all of which taken together make up the element of increase of total population, cannot be readily discerned from mere numerical tables. It has been deemed desirable therefore to furnish a series of graphical representations, shewing in some cases the characteristics of these elements from 1788 to 1906, and in others from 1860 to 1906. The graphs furnish at a glance a clear indication of the changes taking place, and of their significance from year to year. The great importance of such representations is that only by their means can the most recent changes be justly apprehended, either in their relation to the past, or their meaning for the future.

2. **Graphs of Total Population** (page 183).—These graphs furnish interesting evidence of the comparatively slow rate of growth of the several States and of the Commonwealth as a whole, during the period from the foundation of settlement in 1788 until 1832. From that year onwards to 1851, a moderately increased rate of progress was experienced. In 1851 gold was discovered in Australia, and the effect of this discovery on the population of the Commonwealth is shewn by the steepness of the curves for New South Wales and Victoria, and also of the Commonwealth, from this point onwards for a series of years. The sudden breaks in the continuity of the curves for New South Wales indicate the creation of new colonies, and their separation from the mother colony. Thus, Tasmania came into existence in 1825, Victoria in 1851, and Queensland in 1859. Owing to the extensive gold discoveries in Victoria, its population increased so rapidly that in 1854 its total passed that of New South Wales, and remained in excess until 1892, when the mother State again assumed the lead, which it has since maintained. The rate of increase in New South Wales is large, but the State is only sparsely populated. A feature of the New South Wales curve is its comparative regularity as compared with that of Victoria, the population of which State increased with great rapidity from 1851 to 1860, less rapidly from 1861 to 1878, with a further period of increased rapidity from 1878 to 1891, and a period of very slow and fluctuating growth from the latter year to 1906. Victoria, however, has a population density more than double that of Tasmania, and about three times that of New South Wales.

In the case of Queensland, the curve indicates a rate of growth which, though varying somewhat, has on the whole been satisfactory, and at times very rapid. Periods of particularly rapid increase occurred from 1862 to 1865, from 1873 to 1877, and from 1881 to 1889. The population of Queensland passed that of Tasmania in 1867, and that of South Australia in 1885. The population density of Queensland is less than one-seventeenth that of Victoria.

The curve for South Australia indicates that with fluctuations more or less marked, the population increased at a moderate rate from the date of the foundation of the colony in 1836 until 1884, and that from that point onwards a diminished rate of increase was experienced. The population of South Australia passed that of Tasmania in 1852. Its density is about half that of Queensland, about one-twelfth that of New South Wales, and about one-thirty-third that of Victoria.

The curve for Western Australia indicates that the population increased regularly but very slowly until 1886, when the discovery of gold in the Kimberley division caused an influx of population. The effects of the further rich discoveries of gold in the Murchison and Coolgardie districts in 1891 and 1892, are clearly shewn in the rapid increase of population in those and subsequent years to 1897. Two years of retarded progress then occurred, followed by a satisfactorily rapid rate of increase from 1899 to 1906. The population of Western Australia became greater than that of Tasmania in 1899. Its density is little more than half that of South Australia, one-third that of Queensland, one-eighteenth that of New South Wales, and about one-fiftieth that of Victoria.

The Tasmanian population curve indicates a comparatively slow rate of growth throughout. Its most noticeable feature is a retardation in increase in 1852 and subsequent years, brought about by the discovery of gold on the mainland. The population density of Tasmania is more than 40 % greater than that of New South Wales, and a little less than half that of Victoria.

3. **Graphs for Commonwealth of Male and Female Population** (page 184).—These curves shew the relative growth of male and female population of the Commonwealth, and it will be seen that the former are far more liable to marked fluctuations than the latter. The curves representing an increase of population on the basis of the United States rate for 1790 to 1860, indicate that on the whole the female rate of increase in the Commonwealth has been a fairly satisfactory one, and that from 1860 to 1893 the same might be said of the male population. From 1893 onwards, however, the male population of the Commonwealth has fallen considerably below this rate, and it may be added that the rapid lowering of the rate of increase of the male population must be regarded as unsatisfactory from a national standpoint.

Although the rate of increase of the female population from 1860 onwards is on the whole very satisfactory, it should be noted that the total number at the beginning of this period was relatively very small, and that from 1894 there is an unsatisfactory falling off in the rate of increase, similar to that experienced in the case of males.

4. **Graphs for each State of Male and Female Population** (page 185).—These graphs, shewing the relative progress in male and female population for each of the States, disclose the fact that in all cases the female population is much less liable to marked fluctuations than the male, and further, that in cases where rapid increases have taken place in the latter a similar, but much more gradual, increase is in evidence in the former, commencing usually, however, somewhat later than in the case of the males. A comparison of the graphs of each of the States with that of the Commonwealth shews that the fluctuations in the latter case are smaller than in the former. This is largely due to internal migrations of the male element of the population, brought about by various causes, amongst which mining developments figure prominently.

5. **Graphs of Natural Increase of Population, Commonwealth and States** (page 217).—The graphs indicate that, with the exception of certain marked variations, the natural increase of the population of the Commonwealth, viz., the excess of births over deaths, advanced with fair rapidity from 1860 to 1892, in which year it attained its maximum, when, however, it fell rapidly till 1898. A subsequent rise to 1900 was followed by a continuous fall for the three years succeeding, viz., to 1903. The recovery shows a fairly rapid rise to 1906. The years in which the natural increase of the Commonwealth was at its highest were 1865, 1871, 1881, 1892, and 1900; and the years of extraordinarily low rates of natural increase were 1866, 1875, 1882, 1898, and 1903. The low rate of 1898 was due in large measure to a phenomenally high death rate experienced in practically all the States in that year, when an epidemic of measles was prevalent throughout the Commonwealth. The low rate of 1903 was brought about by the low birth rates and high death rates which accompanied the drought of 1902-3, while the advance in the rate of natural increase since 1903 has been collateral with the marked improvement in material conditions experienced throughout the Commonwealth during that period.

6. **Graphs shewing Net Increase of Population** (pages 186 and 187).—The graphs disclose the fact that the most notable years of large net increases of population of the Commonwealth as a whole were 1864, 1877, 1883, 1888, and 1905. The highest increase was attained in 1883. The net increase for 1905, though higher than for any year since 1891, fell somewhat short of that for 1877. The years in which low net increases were noticeable were 1861, 1867, 1872, 1878, 1889, 1893, 1898, and 1903.

The graph for New South Wales indicates a high net increase of population between 1876 and 1893, advancing to a maximum in 1883, and then declining to 1901. From the latter year onwards to 1906 an advance in the net increase has been in evidence.

A feature of the graph shewing the Victorian net increase is the height attained in 1864, 1870, 1888, and 1901, the smallness of the increase for the years 1861 and 1875, and the decreases for 1896 and 1903.

For Queensland it will be seen that the years of high net increases were 1862, 1875, 1883, 1895, and 1901, while the years in which these were at very low level were 1869, 1878, 1891, and 1903.

In South Australia the net increases were exceptionally high in 1865, 1876, 1883, and 1892, and correspondingly low in 1870, 1886, and 1896.

In Western Australia the net increase graph indicates no very marked advance until about 1884, from which it rises somewhat rapidly to 1886, and then declines to 1888. This is followed by an exceedingly rapid rise to 1896, and a subsequent fall to 1899, succeeded by a further rise to 1902, and fall thereafter.

In the case of the Tasmanian graph indications of a very varied net increase are in evidence, the principal high points being those for the years 1887, 1891, 1897, and 1902, while actual decreases were experienced in 1874, 1875, 1892, and 1906.

SECTION V.

VITAL STATISTICS.

§ 1. Births.

1. **Male and Female Births, 1901 to 1906.**—The total number of male and female births registered in the Commonwealth and New Zealand during the years 1901 to 1906 is as shewn in the two tables hereunder:—

TOTAL MALE BIRTHS, AUSTRALASIA, 1901 to 1906.

State, etc.	1901.	1902.	1903.	1904.	1905.	1906.
New South Wales. ...	19,149	19,322	18,377	19,857	20,206	21,066
Victoria	15,876	15,583	15,115	15,313	15,523	15,716
Queensland	7,281	7,279	6,427	7,134	6,978	7,280
South Australia[1] ...	4,687	4,587	4,484	4,686	4,514	4,617
Western Australia ...	2,946	3,241	3,433	3,666	3,862	4,043
Tasmania	2,570	2,604	2,570	2,702	2,812	2,792
Commonwealth ...	52,509	52,616	50,406	53.358	53,895	55,514
New Zealand ...	10,471	10,653	11,217	11,762	12,109	12,397

1. Including Northern Territory.

TOTAL FEMALE BIRTHS, AUSTRALASIA, 1901 to 1906.

State, etc.	1901.	1902.	1903.	1904.	1905.	1906.
New South Wales ...	18,726	18,513	17,589	18,810	19,295	19,882
Victoria	15,132	14,878	14,454	14,450	14,584	15,128
Queensland	7,022	6,937	6,194	6,948	6,648	6,739
South Australia[1] ...	4,424	4,360	4,024	4,447	4,354	4,329
Western Australia ...	2,772	2,991	3,266	3,510	3,720	3,757
Tasmania	2,360	2,481	2,510	2,590	2,445	2,541
Commonwealth ...	50,436	50,160	48,037	50,755	51,046	52,376
New Zealand ...	10.020	10,002	10,612	11.004	11,573	11,855

1. Including Northern Territory.

2. **Total Births, 1901 to 1906.**—While the total number of births for the Commonwealth was higher in 1906 than in any of the preceding five years, the following table of particulars discloses also the fact that in Victoria, Queensland and South Australia the number of births was less in 1906 than in 1901:—

TOTAL BIRTHS, AUSTRALASIA, 1901 TO 1906.

State, etc.	1901.	1902.	1903.	1904.	1905.	1906.
New South Wales ...	37,875	37,835	35,966	38,667	39,501	40,948
Victoria	31,008	30,461	29,569	29,763	30,107	30,844
Queensland	14,308	14,216	12,621	14,082	13,626	14,019
South Australia[1]	9,111	8,947	8,508	9,133	8,868	8,946
Western Australia ...	5,718	6,232	6,699	7,176	7,582	7,800
Tasmania	4,930	5,085	5,080	5,292	5,257	5,333
Commonwealth ...	102,945	102,776	98,443	104,113	104,941	107,890
New Zealand ...	20,491	20,655	21,829	22,766	23,682	24,252

1. Including Northern Territory.

3. **Birth Rates, 1901 to 1906.**—(i.) *Crude Birth Rate.* The birth rate for the whole Commonwealth was lower in 1906 than in 1901, and Tasmania is the only State in which a slight increase in the rate took place, as will be seen from the following table, which gives also the number of persons per square mile in each State:—

CRUDE BIRTH-RATE[1], AUSTRALASIA, 1901 to 1906.

State, etc.	1901.	1902.	1903.	1904.	1905.	1906.	Density[2] (No. per sq. mile).
New South Wales ...	27.78	27.20	25.41	26.81	26.79	27.12	4.92
Victoria	25.75	25.16	24.46	24.65	24.83	25.20	14.02
Queensland	28.53	27.89	24.62	27.13	25.92	26.31	0.80
South Australia[3]... ...	25.11	24.54	23.25	24.71	23.67	23.55	0.42
Western Australia ...	30.34	30.27	30.26	30.33	30.29	30.01	0.27
Tasmania	28.60	29.23	28.62	29.60	29.33	29.82	6.87
Commonwealth ...	27.14	26.66	25.23	26.33	26.12	26.41	1.38
New Zealand ...	26.34	25.89	26.61	26.94	27.22	27.08	8.68[4]

1. Number of Births per 1000 of the mean annual population.
2. On 31st December, 1906.
3. Including Northern Territory.
4. Excluding Maories.

The population density of each State and of the Commonwealth has been given for the purpose of considering the influence, if any, of concentration of population on birth-rate, in connection with the disparities of the rate in different parts of Australia.

(ii.) *Objections to Crude Birth Rate.* The figures just given represent the "crude birth rate," viz., the number of births per thousand of mean annual population. The number of births per thousand of the female population of child-bearing ages, viz., from 15 to 45, would furnish a more significant rate. To calculate this, would, of course, involve assumptions concerning the variations of the age and sex constitution of the population since the last Census. Calculations of this nature at the present time would be subject to so large an uncertainty that it has been decided to defer computing the rates of fecundity and fertility on other and better bases until after the next Census.

4. **Birth Rates of Various Countries.**—A comparison with other countries shews that the Australian States occupy a very low position, which is, however, fortunately counterbalanced by a still lower position in regard to their death rates, as will be seen from the table on page 200.

CRUDE BIRTH RATE[1] OF VARIOUS COUNTRIES.

Country.	Year.	Rate.	Country.	Year.	Rate.
Russia, European ...	1901	47.9	Tasmania	1906	29.8
Bulgaria	1904	42.8	Denmark	1905	28.4
Jamaica	1905	38.8	Scotland	1905	28.1
Ceylon	1905	38.7	Norway	1905	27.4
Roumania	1905	38.6	Switzerland	1905	27.4
Servia	1905	37.3	England and Wales ...	1905	27.2
Hungary	1905	35.7	New Zealand ...	1905	27.2
Austria	1904	35.4	New South Wales ...	1906	27.1
Spain	1905	35.3	Belgium	1905	27.1
Chile	1905	35.1	United Kingdom ...	1905	26.9
German Empire ...	1904	34.1	**Commonwealth** ...	**1906**	**26.4**
Prussia	1905	33.5	Queensland	1906	26.3
Italy	1905	32.3	Sweden	1905	25.7
Japan	1903	32.0	Victoria	1906	25.2
Finland	1904	31.8	South Australia ...	1906	23.6
Netherlands	1905	30.8	Ireland	1905	23.4
Western Australia ...	1906	30.0	France	1905	20.6

1. Number of births per 1000 of the mean population.

5. **Masculinity at Birth.**—The masculinity of births registered during the last six years in the several States of the Commonwealth, *i.e.*, the number of males per 100 females, has varied from 102.26 in New South Wales in 1901 to 115.01 in Tasmania in 1905. The following table, which gives the values for the States and Commonwealth for 1901 to 1906, shews the remarkable fact that for the Commonwealth there has been a steady increase of masculinity from 1901 to 1906.

MASCULINITY[1] OF BIRTHS REGISTERED IN AUSTRALIA, 1901 TO 1906.

State.	1901.	1902.	1903.	1904.	1905.	1906.
New South Wales ...	102.26	104.37	104.48	105.57	104.72	105.96
Victoria	104.92	104.74	104.57	105.97	106.44	103.89
Queensland	103.69	104.93	103.76	102.68	104.96	108.03
South Australia	105.94	105.21	111.43	105.37	103.67	106.65
Western Australia ...	106.28	108.36	105.11	104.44	103.82	107.61
Tasmania	108.90	104.96	102.39	104.32	115.01	109.88
Commonwealth ...	104.11	104.90	104.93	105.13	105.58	105.99

1. Number of males to each 100 females.

There is ordinarily a very small difference between the masculinity of legitimate and illegitimate births. Thus, according to Bodio, for Europe, for the period about 1887-1891, the masculinity was about 105.5 and 104.5 for total and illegitimate births respectively. The masculinity of illegitimate births in Australia was as follows:—

MASCULINITY[1] OF ILLEGITIMATE BIRTHS REGISTERED IN AUSTRALIA, 1901 TO 1906.

State.	1901.	1902.	1903.	1904.	1905.	1906.
New South Wales ...	108.46	103.67	97.79	100.80	102.50	103.10
Victoria	102.22	106.78	114.83	108.68	102.52	102.23
Queensland	107.84	100.23	95.22	95.77	105.63	104.17
South Australia	100.56	106.91	100.00	83.50	96.94	116.97
Western Australia ...	100.00	111.11	114.29	107.28	98.75	118.13
Tasmania	102.07	93.17	122.66	93.71	102.80	124.92
Commonwealth ...	105.50	103.96	104.10	100.98	102.44	105.44

[1] Number of males to each 100 females.

It is curious to note that while, so far as the total births are concerned, there has always been an excess of male births over female births, this has not been the case in regard to illegitimate births, where in South Australia in 1904 the masculinity was only 83.50. On the other hand it rose as high as 124.82 in Tasmania in 1906. Little weight, however, can be attached to the two last figures on account of the small totals on which they are based.

6. **Illegitimacy.**—The total illegitimates fell from 1901 to 1903, then rose rapidly to 1906. See the following table :—

TOTAL ILLEGITIMATE BIRTHS REGISTERED IN AUSTRALASIA, 1901 TO 1906.

State, etc.	1901.	1902.	1903.	1904.	1905.	1906.
New South Wales ...	2,712	2,497	2,413	2,755	2,912	2,882
Victoria	1,729	1,677	1,695	1,707	1,689	1,721
Queensland	848	859	857	971	950	1,076
South Australia ...	361	389	354	367	386	358
Western Australia ...	222	247	315	313	318	373
Tasmania	293	311	285	308	290	308
Commonwealth ...	6,165	5,980	5,919	6,421	6,545	6,718
New Zealand ...	937	921	994	1,029	1,082	1,132

It is, of course, possible that the number of illegitimate births is somewhat understated, owing to diffidence in proclaiming the fact of illegitimacy, and it is not unlikely that the majority of unregistered births are illegitimate.

(i). *Rate of Illegitimacy, 1901-1906.* The rate of illegitimacy, viz., the percentage of illegitimate to total births, shews on the whole a slight increase, to which an advance in the rate for Queensland and Western Australia is largely contributory, as the subjoined table shews :—

PERCENTAGE OF ILLEGITIMATE ON TOTAL BIRTHS, AUSTRALASIA, 1901 TO 1906.

State, etc.	1901.	1902.	1903.	1904.	1905.	1906.
New South Wales ...	7.16	6.60	6.71	7.12	7.37	7.04
Victoria	5.58	5.51	5.73	5.74	5.61	5.58
Queensland	5.93	6.04	6.79	6.90	6.97	7.68
South Australia ...	3.96	4.35	4.16	4.02	4.35	4.00
Western Australia ...	3.88	3.96	4.70	4.36	4.19	4.78
Tasmania	5.94	6.12	5.61	5.82	5.52	5.78
Commonwealth ...	5.99	5.82	6.01	6.17	6.24	6.23
New Zealand ...	4.57	4.46	4.55	4.52	4.57	4.67

A comparison of greater significance would be obtained by calculating the number of illegitimate births per thousand of the single and widowed female population between the ages of 15 and 45, but until the next Census has once more shewn the composition of the population, such a calculation would be liable to considerable error, and will, therefore, be deferred.

(ii.) *Causes of Increase.* Since the rate of illegitimacy might appear to increase by the mere decrease in the general birth-rate, the following table has been prepared:—

CRUDE ILLEGITIMATE, LEGITIMATE AND TOTAL BIRTH RATES,[1] AUSTRALIA 1901 to 1906.

Births.	1901.	1902.	1903.	1904.	1905.	1906.
Illegitimate	1.62	1.56	1.52	1.62	1.63	1.65
Legitimate	25.52	25.10	23.71	24.71	24.50	24.76
Total	27.14	26.66	25.23	26.33	26.13	26.41

[1] Number of births per 1000 of mean population.

(iii). *Illegitimacy—Rates of Various Countries.* The rate for the Commonwealth is higher than that for England and Wales, slightly lower than that for Scotland, and considerably below the rates for many of the countries for which returns are available, as the table hereunder shews. The rates for the States and Commonwealth are means for 1901 to 1906, while those for other countries are for 1904 or 1905, generally.—

PERCENTAGE OF ILLEGITIMATE ON TOTAL BIRTHS IN VARIOUS COUNTRIES, 1901-6.

Country.	Rate.	Country.	Rate.
Netherlands	2.2	Scotland	6.4
Ireland	2.6	Belgium	6.6
Russia	2.6	Queensland	6.7
England and Wales	4.0	New South Wales	7.0
South Australia	4.1	Norway	7.0
West Australia	4.3	Germany	8.4
Switzerland	4.6	France	8.8
Italy	5.4	Hungary	9.4
Victoria	5.6	Denmark	9.6
Tasmania	5.8	Sweden	11.7
Commonwealth	6.2	Austria	13.3

It may be added that the general circumstances in Australia with regard to opportunity for marriage are probably relatively easy as compared with those in older established countries.

7. **Ages of Parents.**—A computation recently made shews the average age of fathers in the Commonwealth, as stated at the time of the registration of the birth of a child, to be 34.27 years, and the age of mothers of legitimate children 29.90 years. These figures bear out the fact ascertained at the Census that the average difference in the age of married couples is about four-and-a-half years. The average age of mothers of illegitimate children was found at the same time to be 23.98 years.

§ 2. Marriages.

1. **Marriages, 1901 to 1906.**—The number of marriages registered in the Commonwealth in 1906 was 30,410, the highest number ever recorded. There has been a steady increase in the annual number of marriages in each State since 1903, and the crude marriage-rate increased similarly in all the States, with the exception of Western Australia, where a further diminution may reasonably be expected until the composition of the population as to sexes and ages approaches more closely to that of the other States. The number of marriages in each State since 1901 is shewn below :—

TOTAL MARRIAGES, AUSTRALASIA, 1901 TO 1906.

State, etc.	1901.	1902.	1903.	1904.	1905.	1906.
New South Wales ...	10,538	10,486	9,759	10,424	10,970	11,551
Victoria	8,406	8,477	7,605	8,210	8,774	8,930
Queensland	3,341	3,243	2,933	3,078	3,173	3,588
South Australia ...	2,309	2,383	2,272	2,534	2,599	2,681
Western Australia ...	1,821	2,024	2,064	2,088	2,123	2,261
Tasmania	1,338	1,313	1,344	1,350	1,365	1,399
Commonwealth ...	27,753	27,926	25,977	27,684	29,004	30,410
New Zealand ...	6,095	6,394	6,748	6,988	7,200	7,592

2. **Marriage-Rates, 1901 to 1906.**—The number of marriages registered per thousand of mean population is shewn in the following table for the same period :—

CRUDE MARRIAGE-RATE,[1] AUSTRALASIA, 1901 TO 1906.

State, etc.	1901.	1902.	1903.	1904.	1905.	1906.
New South Wales ...	7.73	7.54	6.89	7.23	7.44	7.65
Victoria	6.98	7.00	6.29	6.80	7.24	7.30
Queensland	6.66	6.36	5.72	5.93	6.03	6.73
South Australia ...	6.36	6.54	6.21	6.86	6.94	7.06
Western Australia ...	9.66	9.83	9.32	8.83	8.48	8.70
Tasmania	7.76	7.55	7.57	7.55	7.62	7.82
Commonwealth ...	7.32	7.24	6.66	7.00	7.22	7.44
New Zealand ...	7.83	8.01	8.23	8.26	8.28	8.48

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[1] Number of marriages (not persons married) per 1000 of mean annual population.

3. **Marriage-Rates in Various Countries.**—A comparison of the Australian marriage-rate with that of European countries shews it to be considerably below the rates prevailing in the East of Europe, slightly below those of Central and Western Europe, and higher than those of the North of Europe :—

CRUDE MARRIAGE RATE—VARIOUS COUNTRIES.

Country.	Year.	Crude Marriage Rate.	Country.	Year.	Crude Marriage Rate.
Bulgaria	1904	11.4	Italy	1905	7.6
Servia	1905	9.9	Switzerland	1905	7.6
Russia	1901	8.6	Commonwealth ...	1906	7.4
Hungary	1905	8.4	Netherlands... ...	1905	7.3
New Zealand	1905	8.3	Denmark	1905	7.2
German Empire ...	1904	8.1	Spain	1905	7.2
Belgium	1904	8.0	Scotland	1905	6.7
Rumania	1905	7.9	Finland	1904	6.6
Austria	1904	7.8	Sweden	1905	5.9
England and Wales ...	1905	7.7	Norway	1905	5.8
France	1905	7.7	Ireland	1905	5.3

4. **Age at Marriage.**—The average age of males at the time of marriage is, for the Commonwealth, according to the latest computation, 29.71 years, and that of females, 25.52 years, *i.e.*, reverting to ages given in § 1, 7 hereinbefore, bridegrooms and brides are respectively about 4.56 and 4.38 years younger than fathers and mothers. For the purposes of calculation, this difference may be taken as five years.

5. **Fertility of Marriages.**—The quotient obtained by division of the legitimate births registered, say during the five years 1902-1906, by the number of marriages registered during the five years 1897-1901, *i.e.*, the period antecedent by five years to the period of the births, has been called the "fertility of marriages." This works out at 3.77, or in other words, the number of children to be expected from every four marriages in the Commonwealth is fifteen. This method, while not professing any claim to accuracy, furnishes results which agree fairly well with those found by more elaborate and careful investigation.

6. **Registration of Marriages.**—In all the States of the Commonwealth marriages may be celebrated either by ministers of religion, whose names are registered for that purpose with the Registrar-General, or by certain civil officers, in most cases district registrars. The percentage of marriages celebrated by ministers of religion has increased from 91.25 per cent. in 1901 to 96.97 per cent. in 1906. The figures for the individual States were in 1906: New South Wales, 97.89 per cent.; Victoria, 98.90 per cent.; Queensland, 94.90 per cent.; South Australia, 95.15 per cent.; Western Australia, 88.94 per cent.; and Tasmania, 98.86 per cent. According to the latest returns the registered ministers belong to thirty-seven different denominations, some of which, however, can hardly be regarded as having any valid existence. The extraordinary number of marriages credited to some denominations, the number of whose adherents, according to the Census returns, was very small indeed, is not inconsistent with the supposition that some of these denominations have been created for the purpose of obtaining the registration necessary to conduct marriages, or to be connected with a so-called "Matrimonial Agency."

7. **Mark Signatures.**—The marriage registers afford some clue, even if an imperfect one, to the illiteracy of the adult population, since a small and constantly diminishing percentage of bridegrooms and brides sign the registers with marks.

(i.) *Males and Females, 1901 to 1906.* For a number of years mark signatures by males have been slightly more numerous than those by females, the percentages for the Commonwealth during the past six years having been as follows :—

PERCENTAGE OF MARK SIGNATURES AT MARRIAGE, AUSTRALIA, 1901 to 1906.

Year.	1901.	1902.	1903.	1904.	1905.	1906.
Male	1.35	1.21	1.17	0.95	0.91	0.92
Female	1.29	1.11	1.02	0.91	0.93	0.86

(ii.) *Mark Signatures in Commonwealth States, 1901 to 1906.* The following table shews that while the Tasmanian percentage has been the highest, and the Victorian the lowest, in each of the six years under review, there has been a marked decrease in every State :—

PERCENTAGE OF MARK SIGNATURES AT MARRIAGE IN AUSTRALASIA, 1901 to 1906.

State.	1901.	1902.	1903.	1904.	1905.	1906.
New South Wales ...	1.34	1.22	1.10	0.90	1.12	0.94
Victoria	0.53	0.61	0.60	0.54	0.44	0.43
Queensland	2.56	1.93	1.86	1.72	1.39	1.67
South Australia ...	0.95	1.15	1.32	0.65	0.83	0.67
Western Australia ...	0.99	0.69	0.75	0.53	0.57	0.66
Tasmania	4.11	3.12	2.38	2.85	2.12	2.18
Commonwealth ...	1.32	1.16	1.10	0.93	0.92	0.89
New Zealand	0.54	0.34	0.50	0.54	0.32	0.33

A complete disappearance of mark signatures is hardly to be expected, for the available information tends to shew that two-thirds of those who sign with marks are natives of their respective States, who apparently have not made use of the advantages offered to them by the State schools.

§ 3. Deaths.

1. **Male and Female Deaths, 1901 to 1906.**—The total number of deaths registered in the Commonwealth from 1901 to 1906 inclusive, gives an annual average of 26,309 males and 19,211 females, the details being as follows .—

MALE DEATHS, AUSTRALIA, 1901 TO 1906.

State.	1901.	1902.	1903.	1904.	1905.	1906.	Rate. 1906.
New South Wales ...	9,327	9,535	9,428	8,733	8,709	8,715	10.84
Victoria	9,035	9,152	8,626	7,992	8,273	8,342	13.63
Queensland ...	3,838	3,924	3,951	3,259	3,499	3,212	10.99
South Australia ...	2,289	2,389	2,242	2,071	2,041	2,109	10.56
Western Australia ...	1,653	1,832	1,829	1,823	1,728	1,878	12.25
Tasmania	1,001	1,044	1,136	1,061	1,061	1,118	12.09
Commonwealth ...	27,143	27,876	27,212	24,939	25,311	25,374	11.78

FEMALE DEATHS, AUSTRALIA, 1901 TO 1906.

State.	1901.	1902.	1903.	1904.	1905.	1906.	Rate. 1906.
New South Wales ...	6,694	7,111	7,069	6,627	6,269	6,260	8.86
Victoria	6,869	7,025	6,969	6,401	6,403	6,895	11.27
Queensland ...	2,169	2,280	2,395	1,991	2,004	1,883	7.83
South Australia ...	1,776	1,925	1,709	1,707	1,763	1,822	10.11
Western Australia ...	866	991	959	994	981	1,206	11.31
Tasmania	813	870	980	913	783	893	10.34
Commonwealth ...	19,187	20,202	20,081	18,633	18,203	18,959	9.81

2. **Male and Female Death Rates, 1906.**—The crude male and female death rates for 1906 only are given, viz., in the last column of the preceding tables: both are high for Victoria and Western Australia, while the Queensland rate is lowest for females, and South Australia for males.

Owing to differences in the age constitution of the six States, the crude rates are not, however, strictly comparable, but as has been pointed out in the case of the births, the available data, at a period so remote from the Census, are insufficient for a satisfactory distribution of the population according to ages. For the purposes of calculating the "Index of Mortality" (see page 204) a distribution into five age-groups has, however, been made.

3. **Death Rates of Various Countries.**—A comparison with foreign States is, for the same reason, apt to show the Commonwealth in too favourable a light, but even if an allowance for the different age constitution were made, it would still be found occupying a very enviable position:—

DEATH RATES OF VARIOUS COUNTRIES.

Country.	Year.	Crude Death Rate.	Country.	Year.	Crude Death Rate.
New Zealand	1905	9.3	German Empire ...	1904	19.6
Commonwealth ...	**1906**	**10.9**	Japan	1903	20.0
Norway	1905	14.8	Bulgaria	1904	21.4
Denmark	1905	15.0	Italy	1905	21.7
England and Wales ...	1905	15.2	Jamaica	1905	21.9
Netherlands	1905	15.3	Austria	1904	23.7
United Kingdom ...	1905	15.5	Servia	1905	24.4
Sweden	1905	15.6	Rumania	1905	25.0
Scotland	1905	15.9	Spain	1905	25.9
Belgium	1904	16.9	Ceylon	1905	27.7
Ireland	1905	17.1	Hungary	1905	27.8
Finland	1904	17.7	Russia (European) ...	1901	32.1
Switzerland	1905	17.9	Chile	1905	32.3
France	1905	19.6			

4. **Total Deaths, 1901 to 1906.**—The total number of deaths in each of the Commonwealth States during the six years 1901-1906, shewn below, indicates a marked decrease for Queensland.

TOTAL DEATHS, AUSTRALASIA, 1901 TO 1906.

State.	1901.	1902.	1903.	1904.	1905.	1906.
New South Wales ...	16,021	16,646	16,497	15,360	14,978	14,975
Victoria	15,904	16,177	15,595	14,393	14,676	15,237
Queensland	6,007	6,204	6,346	5,250	5,503	5,095
South Australia ...	4,065	4,314	3,951	3,778	3,804	3,931
Western Australia ...	2,519	2,823	2,788	2,817	2,709	3,084
Tasmania	1,814	1,914	2,116	1,974	1,844	2,011
Commonwealth ...	46,330	48,078	47,293	43,572	43,514	44,333
New Zealand	7,634	8,375	8,528	8,087	8,061	8,339

5. **Crude Death Rates, 1901 to 1906.**—The death rate for 1906 was the lowest experienced during the six years under review in the States of New South Wales and Queensland. In Victoria, South Australia, and Western Australia there were lower rates in some of the intermediate years, though a satisfactory decrease on the 1901 rate is shewn. In Tasmania, however, the rate for 1906 was higher than that for 1901, and was only surpassed in 1903. The Commonwealth rate for 1905 was a little lower than that for 1906, but the difference is insensible.

CRUDE DEATH RATES, AUSTRALASIA, 1901 TO 1906.

State.	1901.	1902.	1903.	1904.	1905.	1906.
New South Wales ...	11.75	11.97	11.65	10.65	10.16	9.92
Victoria	13.21	13.36	12.90	11.92	12.10	12.45
Queensland	11.98	12.17	12.38	10.11	10.47	9.56
South Australia ...	11.20	11 83	10.80	10.22	10.15	10.35
Western Australia ...	13.37	13.71	12.60	11.91	10.82	11.87
Tasmania	10.52	11.00	11.92	11.04	10.29	11.24
Commonwealth ...	12.22	12.47	12.12	11.02	10.83	10.85
New Zealand	9.81	10.50	10.40	9.57	9.27	9.31

6. **Male and Female Death Rates, 1901 to 1906.**—The rise in the Commonwealth rate from 1905 to 1906 was due to an increase in the female death rate, as the subjoined table shews:—

MALE AND FEMALE DEATH RATES, AUSTRALIA, 1901 TO 1906.

Year.	1901.	1902.	1903.	1904.	1905.	1906.
Male Rate	13.65	13.78	13.30	12.02	11.98	11.78
Female Rate	10.64	11.02	10.82	9.92	9.56	9.81
Crude Total Rate ...	12.22	12.47	12.12	11.02	10.80	10.85

7. Infantile Death Rate.—(i.) *Deaths and Death Rates of Male and Female Infants, 1901 to 1906.* A marked improvement has taken place in the infantile death rate since 1901, in which year it stood at 103.61 per thousand births registered, while in 1906 it had fallen to 83.26 per thousand, a rate slightly higher than that experienced in 1904 and 1905. In the following table, which shews both the total number of deaths of children under one year and the rate per thousand births since 1901, males and females are distinguished. The universal experience that during the first few years of life the excess of male births disappears as a consequence of the higher death rate of male infants is shewn by the fact that out of 318,298 male infants born from 1901 to 1906, 32,498 died during their first year of life, while of 302,810 female infants the number who died was only 26,219:—

NUMBER OF INFANTILE DEATHS AND RATE OF INFANTILE MORTALITY, AUSTRALIA, 1901 TO 1906.

Year.	Registered Deaths under one year.			Rate of Infantile Mortality.[1]		
	Males.	Females.	Total.	Males.	Females.	Total.
1901	5,888	4,778	10,666	112.13	94.73	103.61
1902	6,008	5,004	11,012	114.19	99.76	107.15
1903	6,003	4,960	10,963	119.09	103.25	111.36
1904	4,713	3,800	8,513	88.33	74.87	81.77
1905	4,884	3,696	8,580	90.62	72.41	81.76
1906	5,002	3,981	8,983	90.10	76.01	83.26

[1] No. of deaths under 1 year per 1000 births registered.

(ii.) *Infantile Mortality, 1901 to 1906.* Divided among the six States, the rate of infantile mortality during the last six years was as follows:—

RATE OF INFANTILE MORTALITY, AUSTRALASIA, 1901 TO 1906.

State.	1901.	1902.	1903.	1904.	1905.	1906.
New South Wales ...	103.74	109.74	110.35	82.42	80.55	74.53
Victoria	102.94	108.60	106.40	77.92	83.30	92.92
Queensland	101.94	100.17	119.88	76.13	75.52	74.68
South Australia ...	99.99	94.00	97.09	70.51	72.96	75.90
Western Australia ...	128.89	142.01	141.22	113.02	104.19	110.00
Tasmania	89.05	79.06	110.83	90.70	80.65	90.19
Commonwealth ...	103.61	107.15	111.36	81.77	81.76	83.26
New Zealand ...	76.28	82.89	81.08	70.98	67.52	62.10

The movement has been a fairly regular one, shewing an increase in the rate during 1902 and 1903, and a fall since the latter year, so that the 1906 rate was lower than that for 1901 in every State except Tasmania, but above the 1905 rate in Victoria, South Australia, Western Australia, and Tasmania.

(iii.) *Infantile Mortality in Various Countries.* Compared with European countries the States of the Commonwealth occupy a very enviable position, and it may be pointed out that experience has shewn that a high birth rate is often, though not invariably, accompanied by a high infantile death rate. The figures in the subjoined table relate to the latest years for which returns are available:—

RATE OF INFANTILE MORTALITY IN VARIOUS COUNTRIES.

Country.	Year.	Rate of Infantile Mortality.	Crude Birth Rate.	Country.	Year.	Rate of Infantile Mortality.	Crude Birth Rate.
New Zealand ...	1905	68	27.2	Belgium	1904	152	27.1
Norway	1904	76	28.1	Bulgaria	1903	154	41.3
Commonwealth ...	**1906**	**83**	**26.4**	Italy	1904	161	32.6
Sweden	1903	93	25.7	Jamaica	1905	165	38.8
Ireland	1905	95	23.4	Servia	1905	165	37.3
Denmark	1904	112	28.9	Spain	1904	173	34.3
Finland	1904	120	31.8	Ceylon	1905	176	38.7
Scotland	1904	123	28.7	German Empire ...	1904	196	34.1
England and Wales	1905	128	27.2	Rumania	1899	198	42.0
Switzerland ...	1905	129	27.4	Austria	1902	218	37.0
Netherlands ...	1905	131	30.8	Hungary	1905	230	35.7
France	1904	144	20.9	Chile	1903	263	34.0
Japan	1901	151	32.7	Russia, European	1901	272	47.9

8. **Deaths in Age-Groups, 1901 to 1906.**—A distribution of the 273,120 deaths which occurred in the Commonwealth from 1901 to 1906 into age-groups has been made, and the results are tabulated for each State. It is, however, sufficient here to shew the results for the Commonwealth as a whole, which are as follows:—

DEATHS IN AGE-GROUPS, AUSTRALIA, 1901 to 1906.

Ages.	Males.	Females.	Total.	Percentage of Total Males.	Percentage of Total Females.	Percentage of Total.
Under 1 year	32,501	26,216	58,717	20.59	22.75	21.50
1 year and under 5 ...	9,553	8,857	18,410	6.05	7.68	6.70
5 years and under 20 ...	9,543	8,580	18,123	6.04	7.44	6.64
20 years and under 40 ...	23,152	19,400	42,552	14.67	16.83	15.58
40 years and under 60 ...	29,831	17,419	47,250	18.90	15.11	17.30
60 years and under 65 ...	9,111	5,531	14,642	5.77	4.80	5.36
65 years and over ...	43,943	29,232	73,175	27.84	25.36	26.79
Age not stated	221	30	251	.14	.03	.09
Total	157,855	115,265	273,120	100.00	100.00	100.00

9. **Average Age at Death.**—A statement of the average ages at death is not of great value, unless the average ages of the population living are also known ; a calculation has, however, been made on the basis of recent results, which shews the average age at death of males to be 39.73 years, and that of females, 36.82 years.

10. **Index of Mortality.**—The death rates so far shewn are crude rates, *i.e.*, they simply shew the number of deaths per thousand of mean population, without taking the age constitution of that population into consideration. It is, however, a well-known fact that the death rate and age constitution of a people are intimately related, thus, other conditions being equal, the death rate of a country will be lower if it contain a large percentage of young people (not infants). In order to have a comparison of the mortality of various countries on a uniform basis, so far as age constitution is concerned, the International Statistical Institute in its 1895 session recommended the universal adoption of the population of Sweden in five age-groups, as ascertained at the Census of 1890, as the standard population by which this "Index of Mortality," as distinguished from the crude death rate should be ascertained. The calculation for 1906 is shewn below for each of the six States and for the Commonwealth, but it will be understood

that the distribution of the mean population of 1906 into age-groups according to the distribution as found at the Census of 1901 must be taken as the best approximation which the data will admit of, not as absolutely correct.

THE INDEX OF MORTALITY[1] (STATES AND COMMONWEALTH), 1906.

Age-Groups.	Mean Population, 1906, distributed according to Results of Census of 1901.	Number of Deaths, 1906.	No. of Deaths per 1000 of Mean Population, 1906, in each Age-Group.	Age Distribution per 1000 of Standard Population.	Index of Mortality.
NEW SOUTH WALES.					
Under 1 year	38,070	3,052	80.17	25.5	2.04
1 year and under 20	662,068	1,966	2.97	398.0	1.18
20 years „ 40	484,226	2,123	4 38	269.6	1.18
40 „ „ 60	241,284	2,840	11 77	192.3	2.96
60 „ and upwards	84,455	4,994	59.13	114.6	6.78
Total	1,510,103	14,975	9.92	1000.0	13.44
VICTORIA.					
Under 1 year	28,863	2,866	99.30	25.5	2.53
1 year and under 20	509,100	1,645	3.23	398.0	1.29
20 years „ 40	400,771	1,984	4.95	269.6	1.33
40 „ „ 60	187,473	2,476	13.21	192.3	2.54
60 „ and upwards	97,626	6,266	64.18	114.6	7.36
Total	1,223,833	15,237	12.45	1000.0	15.05
QUEENSLAND.					
Under 1 year	13,762	1,047	76.08	25.5	1.94
1 year and under 20	231,072	633	2.74	398.0	1.09
20 years „ 40	176,451	891	5.05	269.6	1.36
40 „ „ 60	85,729	1,096	12.78	192.3	2.46
60 „ and upwards	25,772	1,428	55.41	114.6	6.35
Total	532,786	5,095	9.56	1000.0	13.20
SOUTH AUSTRALIA.					
Under 1 year	8,575	679	79.18	25.5	2.02
1 year and under 20	168,660	409	2.42	398.0	0.96
20 years „ 40	116,192	554	4.77	269.6	1.29
40 „ „ 60	62,413	729	11.68	192.3	2.25
60 „ and upwards	24,099	1,560	64.73	114.6	7.42
Total	379,939	3,931	10.35	1000.0	13.94
WESTERN AUSTRALIA.					
Under 1 year	7,096	858	120.91	25.5	3.08
1 year and under 20	86,361	468	5.42	398.0	2.16
20 years „ 40	118,193	660	5.58	269.6	1 50
40 „ „ 60	39,767	583	14.66	192.3	2.82
60 „ and upwards	8,491	515	60.65	114.6	6.95
Total	259,908	3,084	11.87	1000.0	16.51
TASMANIA.					
Under 1 year	4,776	481	100.71	25.5	2.57
1 year and under 20	80,747	259	3.21	398.0	1.28
20 years „ 40	55,797	255	4.57	269.6	1.23
40 „ „ 60	26,642	294	11.04	192.3	2.19
60 „ and upwards	10,886	722	66.32	114.6	7.60
Total	178,848	2,011	11.24	1000.0	14.87
COMMONWEALTH.					
Under 1 year	101,142	8,983	88.82	25.5	2.26
1 year and under 20	1,738,008	5,380	3.10	398.0	1.23
20 years „ 40	1,351,630	6,467	4.78	269.6	1.29
40 „ „ 60	643,308	8,018	12.46	192.3	2.40
60 „ and upwards	251,329	15,485	61.61	114.6	7.06
Total	4,085,417	44,333	10.85	1000.0	14.24

[1] The "index of mortality" may be thus popularly defined:—In lieu of the actual population of any country, which, in relation to that of any other, would have a different relative number of persons at each age, the particular constitution in respect of age of the population of Sweden in 1890 has been taken as an arbitrary basis for comparison. That is to say, in respect of age each 1000 persons are supposed to be divided as shewn in column 4 of the table, *i.e.*, there are 25.5 persons under 1 year of age, 398.0 between 1 year and under 20 years, etc. Had the local population been thus constituted in respect of age, the actual death rates for each age-group would have furnished the results in column 5, viz., for a 1000 deaths in New South Wales, 2.04 deaths of persons under 1 year of age, 1.18 between 1 and 20 years of age, etc., in all 13.44 persons per 1000 of the population instead of 9.92 per thousand In this way each group and total rate may be regarded as independent of the accident of the local distribution as to age.

The small number of persons whose ages were not ascertained at the 1901 Census have been proportionately distributed among the various age-groups, and the same plan has been followed in respect of the 251 persons who died in 1906, and whose ages were not stated in the certificates of death.

It will be seen that the States and the Commonwealth remain in the same order with one exception—while the crude death rate was second highest in Western Australia, and highest in Victoria, the index of mortality was higher in Western Australia than in Victoria. The range of the indexes is rather wider than that of the crude death rates, for while the latter in 1906 rose from 9.56 per thousand in Queensland to 12.45 per thousand in Victoria, a range of 2.89 per thousand, the indexes varied from 13.20 per thousand in Queensland to 16.51 per thousand in Western Australia, a range of 3.31 per thousand.

11. **Causes of Death.**—(i.) *Changes in Classification from 1903 to 1905.* The causes of death were classified in all the States of the Commonwealth to the end of 1903 according to the system originally devised by Dr. William Farr, and modified in 1886 by Dr. William Ogle. A conference of the State Statisticians, held at Hobart in January, 1902, decided to substitute for that system the classification adopted since 1901 by the Registrar-General of England. While New South Wales, Queensland, and Tasmania remodelled their vital statistics on that plan, Victoria, South Australia and Western Australia continued to tabulate according to the Farr-Ogle system, and a comparison of the causes of death in the six States during the years 1903, 1904, and 1905 is, therefore, a matter of extreme difficulty. The differences in tabulation will be seen in the following statement :—

COMPILATION OF CAUSES OF DEATH.

State.	1902.	1903.	1904.	1905.	State.	1902.	1903.	1904.	1905.
New South Wales	Old	Old	Old	New	South Australia ...	Old	Old	Old	Old
Victoria	Old	Old	Old	Old	Western Australia	Old	Old	Old	Old
Queensland ...	Old	New	New	New	Tasmania... ...	Old	New	New	New

Old= Farr-Ogle classification. New= New classification by Registrar-General of England.

(ii.) *The Classification of the International Institute of Statistics.* At a conference held in Melbourne in November and December, 1906, the Commonwealth Statistician recommended the adoption of the classification of the International Institute of Statistics, generally known as the Bertillon Index, and after some discussion that recommendation was accepted, a course which has met with wide approval in medical circles. This index, as the one used by the Registrar-General of England, is based on the original Farr-Ogle classification, but approximates more closely to the present English system than to the older one. The chief advantage possessed by the international classification is that it presents a very extensive field for comparison, the countries which have adopted it representing a population which is probably not less than 150,000,000. The detailed classification groups causes of death under 179 different headings in fourteen categories as follows :—

i. General Diseases.
ii. Diseases of the Nervous System and Organs of Special Sense.
iii. Diseases of the Circulatory System.
iv. Diseases of the Respiratory System.
v. Diseases of the Digestive System.
vi. Diseases of the Genito - urinary System and Adnexa.
vii. Puerperal Condition.
viii. Diseases of the Skin and Cellular Tissue.
ix. Diseases of the Organs of Locomotion.
x. Malformations.
xi. Infancy.
xii. Old Age.
xiii. Violence.
xiv. Ill-defined Diseases.

(iii.) *Compilation of Vital Statistics for 1907 in Commonwealth Bureau.*—The vital statistics of the six Commonwealth States for 1907 are being tabulated according to this classification in the Commonwealth Bureau, and the system is being employed in the majority of the State offices in the preparation of their monthly and quarterly bulletins of vital statistics.

(iv.) *Classification of Causes of Death, 1905, according to Abridged Bertillon Index.* An abridged classification, which enumerates thirty-five diseases and groups of diseases, is in use in many European and American States, and while the Commonwealth Statistics for 1907 are being compiled on the detailed classification of 179 headings, it was at least possible to group the causes of death experienced in 1905, the latest year for which returns are available, under the 35 headings of the abridged classification. Two slight modifications had to be made, viz., in No. 31, Congenital Debility and Malformations, only children under three months, who died of congenital debility, should have

CAUSES OF DEATH—AUSTRALIA, 1905.

(*a*) MALES.

Cause.	N.S.W.	Vict.	Q'land.	S. Aust.	W. Aus.	Tas.	C'wlth.
1 Typhoid Fever	151	71	66	23	71	16	398
2 Typhus	—	—	—	—	—	—	—
3 Intermittent Fever and Malarial Cachexia	10	—	34	1	3	—	48
4 Small-pox	—	—	—	—	—	—	—
5 Measles	14	47	1	—	1	1	64
6 Scarlet Fever	9	6	1	6	1	1	24
7 Whooping Cough	3	5	7	4	1	—	20
8 Diphtheria and Croup	56	46	22	6	16	10	156
9 Influenza	99	71	28	16	6	9	229
10 Asiatic Cholera	—	—	—	—	—	—	—
11 Cholera Nostras	1	—	—	—	1	—	2
12 Other Epidemic Diseases ...	89	37	180	2	45	3	356
13 Tuberculosis of the Lungs ...	638	699	285	130	102	62	1,916
14 Tuberculosis of the Meninges ...	47	77	6	15	7	7	159
15 Other forms of Tuberculosis ...	68	113	46	18	13	19	277
16 Cancer and other Malignant Tumours	525	498	196	118	74	45	1,456
17 Simple Meningitis	78	82	39	29	22	14	264
18 Congestion, Hæmorrhage and Softening of the Brain	374	266	101	74	18	32	865
19 Organic Diseases of the Heart ...	289	247	187	21	37	18	799
20 Acute Bronchitis	126	71	20	33	14	16	280
21 Chronic Bronchitis	218	213	76	37	19	10	573
22 Pneumonia	424	618	165	104	114	47	1,472
23 Diseases of the Stomach (Cancer excepted)	53	62	32	47	17	11	222
24 Diarrhœa and Enteritis (children under two years only) ...	528	403	213	62	184	31	1,421
25 Hernia (Intestinal Obstructions) ...	72	99	22	18	14	7	232
26 Cirrhosis of the Liver	70	64	22	13	16	5	190
27 Nephritis and Bright's Disease ...	413	384	126	88	57	15	1,083
28 Non-cancerous Tumours and other Diseases of the Female Genital Organs	—	—	—	—	—	—	—
29 Puerperal Septicæmia (Puerperal Fever, Puerperal Peritonitis, Puerperal Phlebitis)	—	—	—	—	—	—	—
30 Other Puerperal Accidents of Pregnancy and Confinement ...	—	—	—	—	—	—	—
31 Congenital Debility and Malformations	741	545	161	138	155	85	1,825
32 Senile Debility...	578	734	124	171	47	153	1,807
33 Violence	666	539	339	173	189	108	2,014
33A Suicide	132	114	85	47	44	9	431
34 Other Diseases...	2,054	2,027	817	609	398	232	6,137
35 Unspecified or Ill-defined Diseases	183	135	98	38	42	95	591
Total—Males	8,709	8,273	3,499	2,041	1,728	1,061	25,311

been included. The age limit had here to be extended to 12 months, as in the majority of States the causes of death were only tabulated for the group "under one year." For the same reason, the very few cases of "Insufficient Nourishment of Infants," No. 158 of detailed, and No. 34 of abridged classification, had to be included with No. 173, "Inanition," of detailed, and No. 33 of abridged classification. Apart from the two cases mentioned, it is believed that all the causes of death enumerated either under the Farr-Ogle, or under the Registrar-General's classification, have been grouped under the correct headings of the abridged Bertillon Index:—

CAUSES OF DEATH—AUSTRALIA 1905.

(b) FEMALES.

Cause.	N.S.W.	Vic.	Q'land.	S. Aus.	W.Aus.	Tas.	C'wlth.
1 Typhoid Fever	90	50	30	19	36	7	232
2 Typhus	—	—	—	—	—	—	—
3 Intermittent Fever and Malarial Cachexia	3	—	4	—	—	—	7
4 Small-pox	—	—	—	—	—	—	—
5 Measles	15	32	—	—	—	2	49
6 Scarlet Fever	12	4	—	2	2	—	20
7 Whooping Cough	2	15	3	2	—	—	22
8 Diphtheria and Croup	59	42	24	8	23	2	158
9 Influenza	84	62	25	11	10	7	199
10 Asiatic Cholera	—	—	—	—	—	—	—
11 Cholera Nostras	2	1	—	—	—	—	3
12 Other Epidemic Diseases ...	68	23	128	5	17	—	241
13 Tuberculosis of the Lungs ...	399	536	112	149	60	72	1,328
14 Tuberculosis of the Meninges ...	46	56	8	13	4	4	131
15 Other forms of Tuberculosis	54	99	21	22	12	13	221
16 Cancer and other Malignant Tumours	440	455	155	131	53	52	1,286
17 Simple Meningitis	56	63	26	28	15	9	197
18 Congestion, Hæmorrhage, and Softening of the Brain ...	307	268	61	57	8	45	746
19 Organic Diseases of the Heart ...	267	208	124	21	15	15	650
20 Acute Bronchitis	87	52	19	21	10	9	198
21 Chronic Bronchitis	163	179	38	44	13	13	450
22 Pneumonia	242	413	81	76	56	22	890
23 Diseases of the Stomach (Cancer excepted)	74	86	28	15	12	5	220
24 Diarrhœa and Enteritis (children under two years only) ...	450	331	155	72	136	28	1,172
25 Hernia, Intestinal Obstructions ...	50	86	17	28	14	5	200
26 Cirrhosis of the Liver	30	43	17	3	4	3	100
27 Nephritis and Bright's Disease ...	234	294	74	45	28	15	690
28 Non-cancerous Tumours and other Diseases of the Female Genital Organs	46	43	19	14	7	5	134
29 Puerperal Septicæmia (Puerperal Fever, Puerperal Peritonitis, Puerperal Phlebitis)	104	53	22	9	9	8	205
30 Other Puerperal Accidents of Pregnancy and Confinement ...	175	119	45	25	33	14	411
31 Congenital Debility and Malformations	558	384	132	113	113	75	1,375
32 Senile Debility	406	529	72	219	19	108	1,353
33 Violence	254	218	75	50	36	16	649
33A Suicide	38	26	11	10	4	—	89
34 Other Diseases...	1,324	1,511	415	526	199	151	4,126
35 Non-specified or Ill-defined Diseases	130	122	63	25	33	78	451
Total—Females	6,269	6,403	2,004	1,763	981	783	18,203

CAUSES OF DEATH—AUSTRALIA, 1905.

(c) TOTAL, MALES AND FEMALES.

Cause.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'w'lth.
1 Typhoid Fever	241	121	96	42	107	23	630
2 Typhus	—	—	—	—	—	—	—
3 Intermittent Fever and Malarial Cachexia	13	—	38	1	3	—	55
4 Small-pox	—	—	—	—	—	—	—
5 Measles	29	79	1	—	1	3	113
6 Scarlet Fever	21	10	1	8	3	1	44
7 Whooping Cough	5	20	10	6	1	—	42
8 Diphtheria and Croup ...	115	88	46	14	39	12	314
9 Influenza	183	133	53	27	16	16	428
10 Asiatic Cholera	—	—	—	—	—	—	—
11 Cholera Nostras	3	1	—	—	1	—	5
12 Other Epidemic Diseases ...	157	60	308	7	62	3	597
13 Tuberculosis of the Lungs ...	1,037	1,235	397	279	162	134	3,244
14 Tuberculosis of the Meninges	93	133	14	28	11	11	290
15 Other forms of Tuberculosis	122	212	67	40	25	32	498
16 Cancer and other Malignant Tumours	965	953	351	249	127	97	2,742
17 Simple Meningitis	134	145	65	57	37	23	461
18 Congestion, Hæmorrhage, and Softening of the Brain ...	681	534	162	131	26	77	1,611
19 Organic Diseases of the Heart	556	455	311	42	52	33	1,449
20 Acute Bronchitis	213	123	39	54	24	25	478
21 Chronic Bronchitis... ...	381	392	114	81	32	23	1,023
22 Pneumonia	666	1,031	246	180	170	69	2,362
23 Diseases of the Stomach (Cancer excepted)	127	148	60	62	29	16	442
24 Diarrhœa and Enteritis (children under two years only)	978	734	368	134	320	59	2,593
25 Hernia, Intestinal Obstructions	122	185	39	46	28	12	432
26 Cirrhosis of the Liver ...	100	107	39	16	20	8	290
27 Nephritis and Bright's Disease	647	678	200	133	85	30	1,773
28 Non-cancerous Tumours and other Diseases of the Female Genital Organs	46	43	19	14	7	5	134
29 Puerperal Septicæmia (Puerperal Fever, Puerperal Peritonitis, Puerperal Phlebitis)	104	53	22	9	9	8	205
30 Other Puerperal Accidents of Pregnancy and Confinement	175	119	45	25	33	14	411
31 Congenital Debility and Malformations	1,299	929	293	251	268	160	3,200
32 Senile Debility	984	1,263	196	390	66	261	3,160
33 Violence	920	757	414	223	225	124	2,663
33A Suicide	170	140	96	57	48	9	520
34 Other Diseases	3,378	3,538	1,232	1,135	597	383	10,263
35 Non-specified or Ill-defined Diseases	318	257	161	63	75	173	1,042
Total—Males and Females...	14,978	14,676	5,503	3,804	2,709	1,844	43,514

12. **Deaths from Special Causes.**—It is not considered advisable to give detailed statements as to the number of deaths from various classes of diseases until a uniform tabulation is once more available. The three foregoing tables furnish, however, several indications to which it seems desirable to draw attention.

Infantile and senile debility were responsible for nearly equal numbers of deaths, viz., 3200 and 3160. Diarrhœal diseases claimed 2593 victims under two years of age.

Tubercular diseases ranked first in order of fatality, tuberculosis of the lungs being responsible for 3244, tuberculosis of the meninges for 290, and other forms of tuberculosis for 498 deaths, a total of 4032. Other pulmonary troubles were also much in evidence during the year, 2862 deaths being ascribed to pneumonia, 1028 to chronic bronchitis, and 478 to acute bronchitis. Cancer in its various forms, such as Carcinoma, Sarcoma, Epithelioma, etc., claimed 2742 victims, and, as has been the case for a number of years, male deaths predominated over female deaths, the number being 1456, and 1286 respectively. The three diseases next in order of fatality were Nephritis and Bright's disease, with 1773 deaths; congestion, hæmorrhage, and softening of the brain, with 1611 deaths; and organic diseases of the heart, with 1449 deaths. Deaths from violence, mainly of course accidental deaths, numbered no less than 2663, viz., 2014 male and 649 female deaths. Although the figures here given do not disclose the fact, it may be stated that the male liability to accidental death is three times greater than the female liability for all kinds of accidents except burning, where the number of male and female deaths are nearly equal. Deaths from puerperal septicæmia numbered 205, and from other puerperal accidents, 411.

The number of suicides during 1905 was 520, viz., 431 males, and 89 females. Deaths from epidemic diseases were not numerous; typhoid fever claimed 630 victims; influenza, 428; diphtheria and croup, 314; measles, 113; scarlet fever, 44; and whooping cough, 42. No deaths from small-pox were registered, and it is some years since that scourge last made its appearance in Australia. The only two diseases beside small-pox which figure in the abridged classification, and from which no deaths were registered, are typhus and Asiatic cholera. Fortunately no cases of either have ever yet occurred in Australia.

(i.) *Deaths from Phthisis.* Deaths from tubercular diseases have shown a satisfactory decrease for a number of years. The subjoined table shews that while the actual number of deaths was practically the same in 1904 and in 1891, this was equivalent to a decrease from 1110 to 897 per million of population, with a further fall to 808 per million in 1905.

DEATHS FROM PHTHISIS—AUSTRALIA, 1891-1905.

Year.	1891.	1896.	1901.	1902.	1903.	1904.	1905.
Males	2,227	2,080	2,097	2,124	2,076	2,016	1,916
Females	1,322	1,416	1,460	1,427	1,482	1,532	1,328
Total	3,549	3,446	3,557	3,551	3,558	3,548	3,244
Per 1,000,000 of population	1,110	978	938	921	912	897	808

The favourable position occupied by Australia, a position only surpassed by that of the Dominion of New Zealand, in regard to deaths from tubercular diseases, as compared with various countries of the old world, will be seen from the following table, which gives the information for the latest available dates:—

DEATHS FROM PHTHISIS—VARIOUS COUNTRIES.

Country.	Year.	Deaths per Million Inhabitants.	Country.	Year.	Deaths per Million Inhabitants.
New Zealand	1905	570	Spain	1904	1,509
Commonwealth ...	**1905**	**808**	Jamaica	1905	1,522
Ceylon	1905	957	German Empire ...	1904	1,796
Belgium	1904	1,091	Switzerland	1904	1,882
England and Wales ...	1905	1,144	Norway	1904	1,964
Italy	1905	1,182	Chile	1905	2,017
Netherlands	1905	1,357	Ireland	1905	2,099
United Kingdom ...	1904	1,365	Servia	1905	3,325
Japan	1903	1,449	Austria	1903	3,362
Scotland	1904	1,456	Hungary	1905	4,415

(ii.) *Deaths from Cancer.* In regard to deaths from cancer, the position is much less favourable. From 1891 to 1896 there was an increase of 44 deaths per million of population, followed by a further increase of 75 per million from 1896 to 1901. The variations from 1901 to 1904 were slight, but a considerable increase was again shewn in the 1905 figures, which amounted to 683 per million of population, an increase of 37 per cent. as compared with the figures for 1891. The following table shews both the actual number of deaths and the deaths per million of population:—

DEATH FROM CANCER—AUSTRALIA 1891-1905.

Year.	1891.	1896.	1901.	1902.	1903.	1904.	1905.
Males	908	1,027	1,336	1,344	1,368	1,293	1,456
Females	685	883	1,065	1,123	1,188	1,275	1,286
Total ...	1,593	1,910	2,401	2,467	2,556	2,568	2,742
Per 1,000,000 of population	498	542	633	640	655	649	683

It will be seen from the table below that compared with the majority of European countries the Australian death rate from cancer, high as it is, does not shew unfavourably.

DEATHS FROM CANCER.—VARIOUS COUNTRIES.

Country.	Year.	Deaths per Million Inhabitants.	Country.	Year.	Deaths per Million Inhabitants.
Ceylon	1905	53	**Commonwealth** ...	**1905**	683
Servia	1905	104	Austria	1903	735
Jamaica	1905	188	Ireland	1905	749
Chile	1905	286	German Empire ...	1904	787
Hungary	1905	402	Scotland	1904	847
Spain	1904	469	United Kingdom ...	1904	857
Japan	1903	547	England and Wales ...	1905	891
Belgium	1904	561	Norway	1904	955
Italy	1905	576	Netherlands	1905	1,012
New Zealand	1905	651	Switzerland	1904	1,302

(iii.) *Suicide.* The number of suicides has fluctuated from 112 per million of population in 1891 to 131 per million in 1903, with a slight decrease since the latter year to 126 in 1904, and 129 in 1905.

SUICIDE—AUSTRALIA, 1891-1905.

Year.	1891.	1896.	1901.	1902.	1903.	1904.	1905.
Males	305	365	375	387	435	426	431
Females	52	72	77	64	78	72	89
Total	357	437	452	451	513	498	520
Per 1,000,000 of population ...	112	124	119	117	131	126	129

The figures are about 27 per cent. in excess of those for England and Wales, where the numbers per 1,000,000 of population were:—In 1891, 85; in 1896, 86; in 1901, 96; in 1902, 99; in 1903, 105; in 1904, 99; and in 1905, 104.

(iv.) *Deaths from Bubonic Plague.* The first case of bubonic plague occurred in Sydney in January, 1900. As Sydney was in regular communication by steamer with Hong Kong, Bombay, and Noumea, in all of which places plague had been endemic for some time prior to 1900, it has not been definitely ascertained from which of these three ports the disease was originally introduced into Australia. Since the 1900 outbreak there has not been a year in which a few cases have not occurred in New South Wales, Queensland, or Western Australia; out of a total number of 416 fatal cases between January, 1900, and June, 1907, 199 belonged to New South Wales, 182 to Queensland, 34 to Western Australia, and 1 to Victoria. The number of deaths in 1900 was 155; in 1901, 21; in 1902, 76; in 1903, 25; in 1904, 19; in 1905, 49; in 1906, 32; and in the first half of 1907, 39; the mortality during the various outbreaks was approximately one out of every three cases attacked.

§ 4. Graphical Representation of Vital Statistics.

1. **General.**—The progressive fluctuations of the numbers representing the total births and marriages are important indexes of the economic conditions and social ideals of a community. For this reason graphs have been prepared (see pages 215 and 216), shewing these fluctuations from 1860 to 1906, both for the States and the Commonwealth. The facts are very significant from the national point of view and call for serious consideration. To properly appreciate the situation it should be remembered that, normally, the increases of births and also of marriages will be similar to the increase of population. Although the marriage curve shews a falling off in marriages after 1891 (see page 216), it shews a recovery in 1894, and, with the exception of a small fall for 1903, it has continually advanced. The same characteristic is not seen in the curve of births, which discloses a recovering tendency only in 1904.

ACTUAL BIRTHS, DEATHS AND MARRIAGES EXPERIENCED IN THE COMMONWEALTH DURING THE YEARS 1890 TO 1906, COMPARED WITH THE NUMBER THAT WOULD HAVE OCCURRED IF THE RATES OF 1890 HAD REMAINED IN OPERATION.

Year.	Births.		Deaths.		Marriages.	
	Actual.	Number of Births that would have been experienced if the 1890 birth rate had been in operation.	Actual	Number of Deaths that would have been experienced if the 1890 death rate had been in operation.	Actual.	Number of Marriages that would have been experienced if the 1890 marriage rate had been in operation.
1890	108,683		44,449		23,725	
1891	110,187	111,802	47,430	45,737	23,862	24,419
1892	110,158	114,502	42,268	46,842	22,049	25,009
1893	109,322	116,617	45,801	47,707	20,631	25,470
1894	104,660	118,734	42,958	48,573	20,625	25,933
1895	105,084	121,002	43,080	49,501	21,564	26,428
1896	100,134	123,212	45,202	50,405	23,068	26,911
1897	101,137	125,419	43,447	51,308	23,939	27,393
1898	98,845	127,371	51,406	52,106	24,472	27,819
1899	100,638	129,088	47,629	52,809	25,958	28,194
1900	102,221	130,848	44,060	53,529	27,101	28,579
1901	102,945	132,662	46,330	54,271	27,753	28,975
1902	102,776	134,873	48,078	55,175	27,926	29.458
1903	98,443	136,478	47,293	55,832	25,977	29,808
1904	104,113	138,305	43,572	56,579	27,682	30,207
1905	104,941	140,511	43,514	57,482	29,004	30,689
1906	107,890	142,908	44,333	58,462	30,410	31,213

The table on previous page shews the number of births, marriages and deaths which would have been experienced had the rate for 1890 continued, and reveals the significance of the facts disclosed by the curves. It may be remarked that the death rate has greatly improved, and among other countries, Australia stands in a very favourable position in this respect. At the same time the decline in the marriage rate, and the still more serious decline in the birth rate, in a country but sparsely populated, have an obvious and most important bearing on the national future, and on questions concerning the extent to which it is desirable to promote immigration.

2. **Graphs of Annual Births, Commonwealth and States** (page 215).—A striking feature of the graphs of births is the practically continuous increase in the number of births exhibited in the graph for the Commonwealth from 1860 to 1891, and the marked variations of subsequent years. As the curve clearly shews, a turning point in the number of births occurred in 1891, whilst, as regards the separate States, New South Wales and Tasmania date their decline in number from 1893, Victoria from 1891, and Queensland from 1890. In South Australia the corresponding decline took place as early as 1885, while in Western Australia the increase in number of births has been practically continuous throughout.

It is of special interest to note the decline in births associated with the commercial crisis of 1891-3, and also the decline occurring in 1903, an accompaniment of the severe drought of that period.

In the case of New South Wales the graph crosses that of Victoria in 1879, *i.e.*, the births for that year were sensibly identical in the two States. A fairly continuous increase was experienced in the former State from 1860 to 1893, the only marked fluctuation being a sudden decline in 1889 and an equally rapid recovery in 1890. From 1893 to 1898 a somewhat rapid decline again took place, succeeded by a rise, the continuity of which was broken only by a sharp decline in 1903 and recovery in 1904.

In the case of Victoria the graph shews the increase between 1860 and 1880 to have been comparatively slight, the curve being a gradual rise, with fluctuations more or less marked to 1873, with a subsequent decline. From 1880 to 1891 the increase in the number of births is seen to be very rapid and practically continuous, while from 1891 to 1898 an equally sharp and continuous decline was experienced. A further rise and fall took place between 1898 and 1903, succeeded by a continuous rise from the last-mentioned year onwards.

Starting in 1860 with a lower number of births than any State except Western Australia, the Queensland graph shews that the births increased somewhat rapidly until 1867. The equality in the number of births in Queensland and Tasmania in 1864 is shewn by the Queensland curve crossing the Tasmanian curve at the line for that year. From 1867 to 1882 a continuous though somewhat less rapid increase was experienced, followed by a very rapid rise to 1890, in which year Queensland's maximum number of births was recorded. The South Australian graph is crossed by that of Queensland at the year 1885. From 1890 onwards the number of births has fluctuated somewhat, but has, on the whole, retained a practically stationary position at a height rather less than that of 1890. The most serious variation was a sudden fall in 1903, the drought year, and rapid recovery in 1904.

The South Australian graph, a slow but practically continuous rise from 1860 to 1885, exhibits the steady increase in the total number of births. This rise is followed by a slow but fluctuating decline to 1903, and a slight recovery to 1906.

The Tasmanian curve may be regarded as made up of five portions, of which the first, from 1860 to 1877, represents a period of very slight variation, viz., on the whole an increase; the second, from 1877 to 1884, a period of continuous and moderately rapid increase; the third, from 1884 to 1893, a period of rapid increase; the fourth, from 1893 to 1898, a period of continuous but slow decrease; and the fifth, from 1898 onwards, a period of steady recovery.

The Western Australian curve indicates that an increase, which was practically continuous but very slow, took place from 1860 to 1884, and that a somewhat quicker rate of increase, experienced from 1884 to 1895, was succeeded by a still more rapid and very satisfactory rate of increase from 1896 onwards.

It will be seen that the years in which the highest points were reached by the several curves are as follows:—

State ...	N.S.W.	Vic.	Q'land	S. Aust.	W. Aust.	Tas.	C'wealth
Year ...	1906	1893	1890	1885	1906	1906	1891

3. **Graphs of Annual Marriages, Commonwealth and States** (page 216).—The Commonwealth marriage graph from 1860 to 1885 reveals a moderate but somewhat fluctuating increase in the annual number of marriages between 1860 and 1871, a more rapid increase between 1871 and 1879, and a still more rapid increase between 1879 and 1885. From 1885 to 1891 the numbers continued to increase, but with marked fluctuations in rate. The financial crisis associated with the period subsequent to the latter year was accompanied by a strongly-marked decline in the number of marriages, which reached its lowest point in 1894. From that year onwards a fairly rapid recovery was effected, the record for 1891 being exceeded by that of 1897. This progress was maintained until 1902, when the severe drought of that and the succeeding year were collateral with a rapid fall in the number of marriages. An equally rapid recovery, however, has since taken place, and the number of marriages in the Commonwealth during 1906 was greater than in any preceding year.

4. **Graphs of Annual Deaths, Commonwealth and States** (page 217).—The curves, shewing the progression of the annual number of deaths, indicate clearly that the periods for which exceptionally large numbers of deaths occurred were:—(1) 1866-7, (2) 1875-6, (3) 1884-5, (4) 1889-1891, (5) 1893, (6) 1898, and (7) 1902-3. It is remarkable that in each of the periods specified the phenomenon of a relatively high number of deaths was experienced in a majority of the States. Thus, as regards 1866-7, all the States except Western Australia and Tasmania were so affected; in 1875-6 all except Western Australia; in 1884-5 all were affected; in 1889 all except Western Australia and South Australia; in 1891 all except Queensland; whilst in 1893 and 1898, and in 1902-3, all were affected. The fact that the periods of high death rates have been practically identical in the several States furnishes an indication that the excessive mortality has been due to a considerable extent to some common cause operating throughout the Commonwealth.

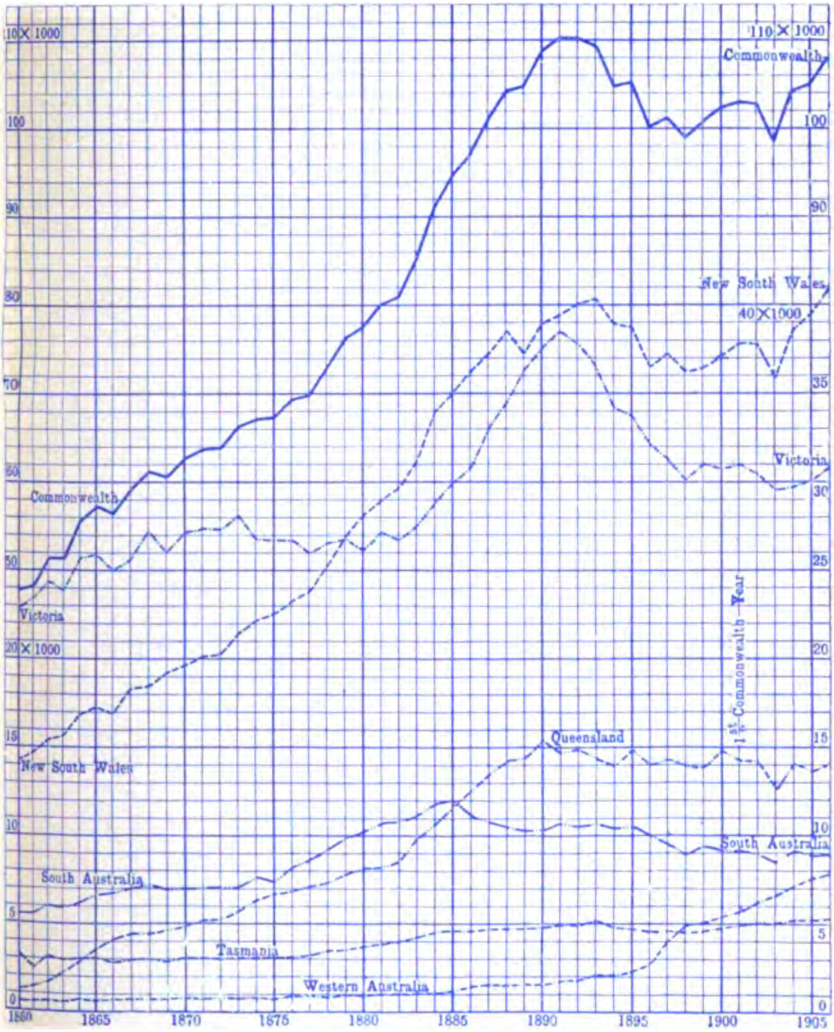
It may be noted as curious that periods of heavy mortality have occurred at intervals of approximately nine years, viz.:—1866-7, 1875-6, 1884-5, 1893, and 1902-3. There are, however, two marked increases between the third and fourth dates, and one between the fourth and fifth. Thus there is no real indication of the periodicity in the death rate.

Periods in which the number of deaths was exceptionally low are far less clearly defined than those in which the number was high, and the agreement amongst the States is also less complete. The principal periods of low mortality may be said to be 1861, 1869-71, 1879, 1892, 1897, 1900, and 1904-5.

5. **Graph of Phthisis, Cancer, Suicide, and Plague.**—The graphs on page 218 shew the relative position occupied by the Commonwealth in regard to deaths from cancer and phthisis as compared with various countries, and the fluctuations during a series of years in the Commonwealth of the death rate from phthisis, cancer, and suicide. The convergence of the lines shewing the death rates from phthisis and cancer is almost regular

enough to warrant the statement that in the Commonwealth during recent years cancer has increased at the same ratio as phthisis has decreased. The comparative graphs shew the exceptionally favourable position occupied by the Commonwealth in regard to deaths from phthisis, and they also shew that, in so far as deaths from cancer are concerned, the position of the Commonwealth is exactly in the middle of the scale. The suicide line shews but little fluctuation, and does not call for any comment. While the three lines relating to phthisis, cancer, and suicide shew the deaths per 10,000 of population, the line marked "Plague" shews actual deaths in hundreds, as to shew deaths per 10,000 of population would have made the line practically identical with the base-line. Even at the time of the most serious outbreak of plague, in 1900, the deaths attributable to it were only one-third of the number of suicides; in 1902 they were about one-sixth; in 1905, less than one-tenth; in 1901 and 1903, less than one-twentieth; and in 1904, not more than one-twenty-sixth.

GRAPHS SHEWING TOTAL ANNUAL BIRTHS IN THE COMMONWEALTH AND STATES OF AUSTRALIA, 1860-1906.



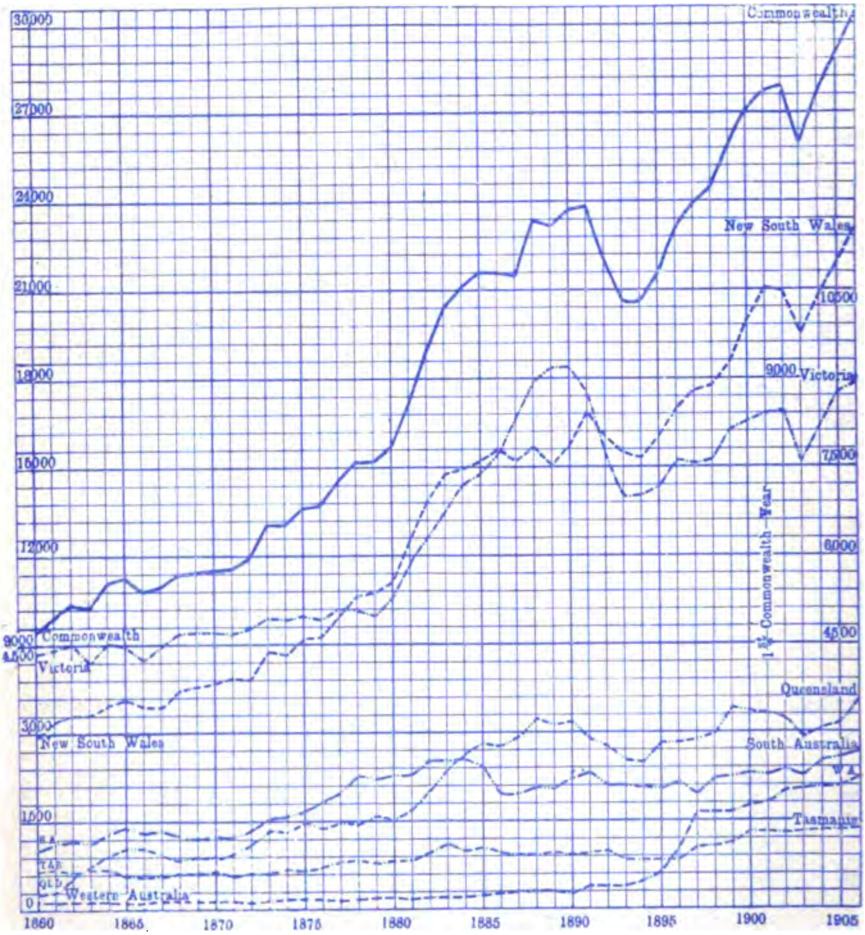
EXPLANATION OF GRAPHS.—The base of each small square represents an interval of one year for both Commonwealth and States, and the vertical height represents 2000 persons of the Commonwealth, and 1000 for the States.

The scale running from 0 to 20 on the left and that from 0 to 40 on the right relate to the States, while those from 50 to 110 on the left and from 90 to 110 on the right refer to the Commonwealth.

The distances upwards from the common zero lines of the States and Commonwealth, marked 0, denote the total annual number of births in the States and Commonwealth, the scale of the latter being reduced one-half.

The names of the States to which the graphs refer are written thereon, and the characters of the lines used are as follows:—Commonwealth, an unbroken line; New South Wales, -- — — -- — —; Victoria, — - - - - — - - - - —; Queensland, - - - - - — - - - —; South Australia, —·· — ·· — ·· —; Western Australia, — - - — — - — - - —; Tasmania, — - - - - - — .

GRAPHS SHEWING TOTAL ANNUAL MARRIAGES IN THE COMMONWEALTH AND STATES OF AUSTRALIA, 1860-1906.



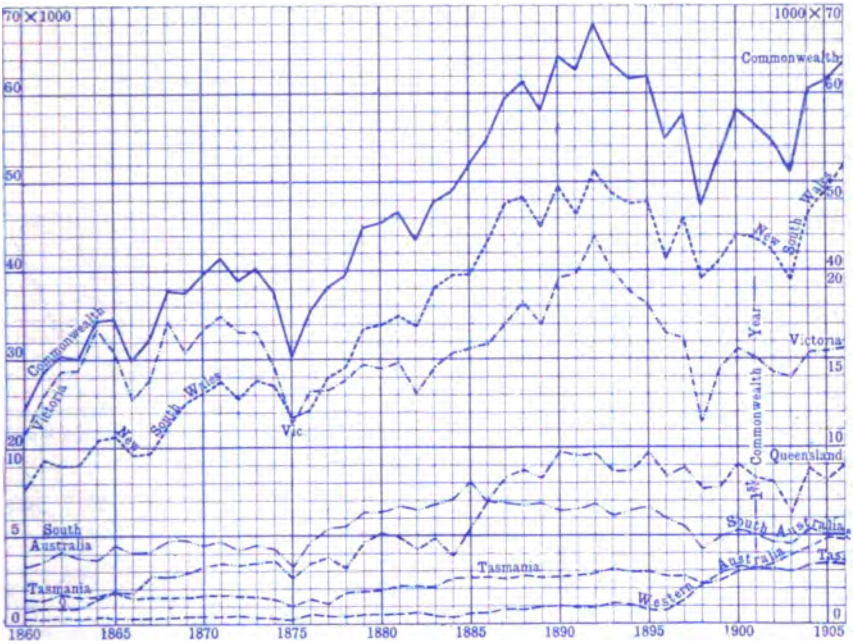
EXPLANATION OF GRAPHS.—The base of each small square represents an interval of one year for both Commonwealth and States, and the vertical height represents 600 marriages for the Commonwealth and 300 for the States.

The scale running from 0 to 4500 on the left and that from 0 to 10,500 on the right relate to the States, while that from 9000 to 30,000 on the left refers to the Commonwealth.

The distances upwards from the zero line marked 0, denote the total annual number of marriages in the States and Commonwealth, the scale of the latter being reduced one half.

The names of the States to which the graphs refer are written thereon, and the lines used are similar to those for births on page 215.

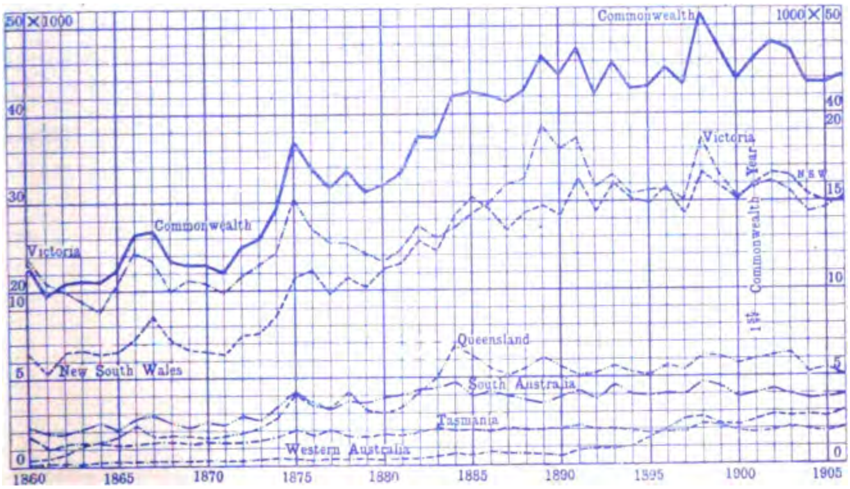
GRAPHS OF NATURAL INCREASE OF THE POPULATION OF THE COMMONWEALTH AND STATES OF AUSTRALIA, 1860-1906.



Explanation of Graphs.—The base of each small square represents one year for both States and Commonwealth, and the vertical height 1000 persons for the States or 2000 persons for the Commonwealth.

The distances upward from the zero line, marked 0 for both Commonwealth and States, denote the excess of births over deaths. The smaller scale running 0. 5. 10. 15. 20 relates to the States, while the larger running 20. 30. 40. 50. 60. 70. relates to the Commonwealth curve. The names shew the States to which the curves refer, they are as follows:—Commonwealth ——; New South Wales — — —; Victoria — - — - —; Queensland — — - - - - - - -; South Australia — - - - - - - —; Western Australia — — — - - — — — -; Tasmania — — - — — -.

GRAPHS SHEWING TOTAL ANNUAL DEATHS IN THE COMMONWEALTH AND STATES OF AUSTRALIA, 1860-1906.



(For Explanation see next page.)

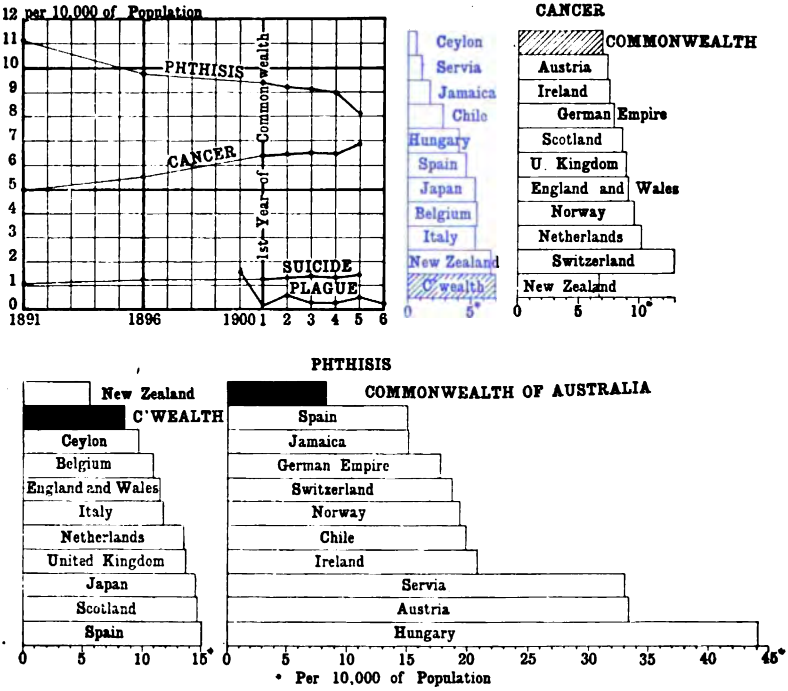
Explanation of Graph.—The base of each small square represents an interval of one year for both Commonwealth and States, and the vertical height represents 2000 persons for the Commonwealth, and 1000 for the States.

The scale running from 0 to 10 on the left of the diagram and that from 0 to 20 on the right relate to the States, while those from 20 to 50 on the left and 40 to 50 on the right refer to the Commonwealth.

The distances upwards from the common zero line for States and Commonwealth, marked 0, denote the total annual number of deaths in the States and Commonwealth, the scale of the latter being reduced one-half.

The names of the States to which the curves refer are written thereon, and the lines used are similar to those for births on page 215.

GRAPHS SHEWING TOTAL ANNUAL DEATHS FROM PHTHISIS, CANCER, SUICIDE AND PLAGUE.



Explanation of Graphs.—In the graph for plague the vertical side of the square denotes 100 persons, since the curve would be invisible on the scale adopted for phthisis and cancer.

In the graphs for phthisis, cancer, suicide, etc., the base of each square represents one year, and the vertical height one person per 10,000 of total population in the Commonwealth of Australia.

If plague were represented on the same scale the height of the curve would be reduced to about one-fourth of the height shewn.

SECTION VI.

LAND TENURE AND SETTLEMENT.

§ 1. Introduction.

1. **First Grants of Land made in New South Wales, 1787.**—In the early days of Australian colonisation, land was alienated by grants and orders from the Crown, the power of making such being vested solely in the Governor, under instructions issued by the Secretary of State. The first instructions, issued on the 25th April, 1787, authorised the Governor to make grants only to liberated prisoners. The grant was to be free from all taxes, rents, fees, and other acknowledgments for the space of ten years, and for each unmarried male was not to exceed thirty acres; in case of a married man twenty acres more was allowed, and a further quantity of ten acres for each child living with his or her parents at the time of making such grant. By further instructions issued by the Secretary of State in 1789, the privilege of obtaining grants was extended to free immigrants and to such of the men belonging to the detachment of marines serving in New South Wales— which then included the whole of the eastern part of Australia—as were desirous of settling in the colony; the maximum grant was not to exceed 100 acres, and was subject to a quit-rent of one shilling per annum for every fifty acres, to be paid within five years of the date of issue. In many cases these grants were made conditional upon a certain proportion of the land being cultivated, or upon certain services being regularly performed, but these conditions do not seem to have been enforced.

2. **Grants of Town Allotments in Sydney, 1811.**—Until the year 1811 all the land which had hitherto been alienated lay outside the borders of the town of Sydney, but in that year the Governor, with the authority of the Secretary of State, commenced to grant town allotments on lease only, for periods of fourteen or twenty-one years; the rents on these leases varied considerably from time to time according to the discretion of the Governor, by whom they were imposed. In 1829, leases were entirely abolished, grants of freehold estates being made in lieu. Five years later they were, however, again introduced under a Government notice, by which allotments in country towns only were allowed to be alienated by lease, with a covenant to convert the same into grants, either upon payment of twenty-one years' quit-rent or upon the erection of buildings to the value of £1000. As regards the payment of quit-rents generally, it appears that they were collected in a very perfunctory manner, and in later years the Government offered special inducements for their redemption. By official notices in 1846, 1849, and in 1851, it was directed that all persons who had paid quit-rent for twenty years should be released from further payment; that those who had paid more than twenty years should have the difference refunded to them; that at any time any person could commute his future quit-rent by an equivalent cash payment, and finally that all quit-rents of a higher annual value than two shillings for every 100 acres should be reduced to that uniform rate at the expiration of the year 1851.

3. **Introduction of Land Sales, 1825.**—By this time the principle of alienation of land by sale to free settlers had already been introduced under Sir Thomas Brisbane, and under a Government order of the 24th March, 1825, land was allowed to be sold by private tender, at a minimum price of five shillings an acre, no person being allowed to buy more than 4000 acres, nor any family more than 5000 acres. The system of alien-

ating town allotments and country lands by means of leases and grants, and also by sale by private tender, remained in force until the year 1831, when grants were abolished, except for public or charitable purposes, and the principle of sale by public auction was made practically the sole means of alienating Crown lands. In 1830 the division of the eastern part of the colony into counties, hundreds and parishes had been completed by a commission of three persons appointed for that purpose. Dividing the territory into nineteen counties, covering about 34,505 square miles, they made a valuation of the whole of the lands with a view to fixing a fair price for future sales. This territory comprised a belt of land in what is now the middle of the Eastern Division of New South Wales, extending from the coast nearly as far as the boundary of the Central Division, and from the Macleay River in the north to the Moruya River in the south.

4. **Free Grants abolished, 1831.**—On the 14th February, 1831, it was notified by a Government order that no Crown lands were in the future to be disposed of except by public auction, the minimum price for country lands being fixed at five shillings an acre, which was raised to twelve shillings an acre in 1839, power being given in the latter year to select, at the upset price, land for which there was no bid at the auction, or upon which the deposit paid at the time of sale had been forfeited. This was the first introduction of the principle of selection into the land laws of Australia, and it was then only applied to lands which had been put up for sale by auction. Blocks of unsurveyed land, comprising an area of 20,000 acres or more, could still be sold by private contract in one lot at not less than the minimum price of twenty shillings an acre.

5. **Land Regulations issued under Imperial Acts, 1842 and 1847.**—These orders were superseded by regulations made under an Imperial Act of Parliament, which came into force in June, 1842. The principle of sale by auction was maintained, the lands were to be surveyed before being put up for sale, and the upset price was fixed at twenty shillings an acre. It was provided that, subject to a primary charge for survey, half the proceeds of sales were to go to defray the cost of immigration of persons to the colony in which the revenue accrued. Under another Act of Parliament, passed in 1847, a new classification of lands took place, and the territory was divided into—first, settled districts, including the nineteen original counties, and the lands in the counties of Stanley and Bourke immediately surrounding the settlements at Moreton Bay and Melbourne respectively; second, intermediate districts, comprising a belt of land from 50 to 200 miles inland beyond the boundaries of the settled districts, and in which pastoral occupation had already spread; and third, unsettled districts extending westward to the extreme limits of the State. Under this Act the principles of sale by auction or by private contract were maintained, but a system was introduced by which leases were granted for various terms in each of the three divisions for pastoral purposes only. During the currency of such a lease the lessee could at any time purchase the freehold at the upset price of £1 an acre, and on the expiration of the term he had a pre-emptive right at the same price over all or any part of the land.

6. **First Land Legislation of Individual States.**—The legislation of 1847 remained in force in New South Wales, as regards the alienation of Crown lands, until the year 1861; and in the States of Victoria and Queensland, which were separated from the mother colony in 1851 and 1859 respectively, until repealed by Acts of the State Parliaments. The discovery of gold in 1851, and the consequent rush of population to Australia, greatly changed the conditions of colonisation. The various States of the Commonwealth have found it to their advantage to adopt different systems for securing the settlement of an industrial and agricultural population. The land regulations of Victoria, Queensland, and Tasmania were identical with those in force in New South Wales until the dates of the separation of these States from the mother State, and at the present time practically the same form of conditional occupation with deferred payments exists in all four States. In Western Australia and in South Australia the influence of the legislation of New South Wales was not felt; in these States new conditions prevailed, and under a different set of circumstances settlement was effected by legislation of a special and novel character.

7. **New South Wales Areas Alienated between 1787 and 1859.**—The subjoined statement shews the areas of Crown lands which had been alienated, both in the mother colony and in the settlements administered from Sydney, from the date of the foundation of the colony in 1787 up to the dates of separation of these settlements by their constitution as separate colonies :—

NEW SOUTH WALES ALIENATIONS, UP TO SEPARATION OF VARIOUS SETTLEMENTS, BETWEEN 1787 AND 1859.

Particulars.	In New South Wales Proper (N.S.W.).	In Van Diemen's Land[1] (Tasmania).	In Port Phillip District[1] (Victoria).	In Moreton Bay District[1] (Q nsland.).
	Acres.	Acres.	Acres.	Acres.
From 1787 to 1823	520,077	57,423	...	...
From 1824 to 1836	4,268,750	...	...	...
From the first settlement in Port Phillip in 1837 to 1841	1,110,544	...	222,214	...
From the first settlement in Moreton Bay in 1842 to the separation of Port Phillip in 1851	48,119	...	121,702	2,521
From 1852 to the separation of Moreton Bay in 1859	899,283	...	...	58,398
Total from 1787 to 1859 inclusive ...	6,846,773	57,423	343,916	60,919

1. Particulars for the States *after* their separation are shewn in subsequent paragraphs.

§ 2. New South Wales.

1. **History of Land Legislation.**—After the excitement of the first rush, following the discovery of gold in 1851, had died away, the interest in gold-digging commenced to decline, and the number of people desiring to settle on the land greatly increased. The question of land-settlement had accordingly to be dealt with in an entirely new spirit, to meet the requirements of a class of immigrants differing greatly from those contemplated by the Act of 1847. The public interest in the question which thus arose resulted in the passing of the Crown Lands Acts of 1861, under the leadership of Mr. (afterwards Sir) John Robertson. The object of these Acts was to facilitate the establishment of an agrarian population side by side with the pastoral tenants. It had hitherto been difficult for men with limited capital to establish themselves with a fair chance of success, but under the new principle of free selection before survey, introduced by Robertson's Act, country lands were sold in limited areas of from 40 to 320 acres at a price of £1 an acre, payable partly by deposit and partly by annual instalments carrying interest. The land had originally been occupied for pastoral purposes under a system of yearly licenses; later on the licensee had been given fixity of tenure, the fee being calculated according to the stock-carrying capacity of the run. By the Occupation Act of 1861 the colony was divided into first and second-class settled districts and unsettled districts, and the whole of the pastoral leases were left open to the operations of free selectors. The runs in the first-class districts were available only on annual leases at £2 per square mile, while in the second-class and unsettled districts runs ranging in area from 25 to 100 square miles could be leased for a term of five years, being open to competition by public tender. The system of unconditional sales was still continued under the Act of 1861, and remained in force until its abolition in 1884. With many benefits there was also considerable mischief as a result of the operation of Robertson's Act, chiefly for the reason that land, being held under pastoral leases not exempt from free selection, could be the subject of speculative selecting without *bona-fide* intention of settlement. The Crown Lands Act of 1884 and the supplementary Act of 1889 were accordingly passed to remedy this state of things. Its measures, while maintaining the principle of free selection before survey, were designed to give fixity of tenure to the pastoral lessees, and at the same time incidentally

tended to restrict the area sold unconditionally. Pastoral leases were required to be surrendered to the Crown and divided into two equal parts. One of these parts was returned to the lessee under a lease with fixity of tenure for a certain term of years; the other half, called the resumed area, the lessee was allowed to hold under an annual occupation license, but this half was always open to selection.

2. **Land Acts now in Force.**—It was found in course of time that the Acts of 1884 and 1889 did not succeed in attaining the objects for which they were designed; settlement proceeded very slowly, and the accumulation of land into large estates continued. Parliament has been led to introduce entirely new principles into the agrarian legislation of the State, embodied in the Crown Lands Acts 1895 to 1905, and in the Closer Settlement Acts 1904 and 1906, which, while still giving fixity of tenure to pastoral lessees, retain the principle of free selection before survey, and offer to *bonâ-fide* settlers special inducements by the introduction of new forms of tenure on easy terms and conditions.

3. **Administration.**—For the purposes of land administration there are now in New South Wales three main territorial "divisions," viz., the Eastern, Central, and Western, each of which is subdivided into a number of "Land Districts." In making the main divisions the special climatic and other prevailing conditions have been taken into consideration. It may be observed that, as a rule, only the Eastern and Central Divisions are suitable for agriculture, dairying, fruit growing, and mixed farming. The climate, soil, and general character of the Western Division rendering it suitable for grazing on a large scale, that part of the State has, by an Act called the "Western Lands Act," been placed under the control of three Commissioners forming the Western Land Board, which has power to recommend leases and otherwise deal with the Crown Lands in this division. In the Eastern and Central Divisions groups of Land Districts are administered by Local Land Boards, comprising a chairman, and either one or two ordinary members. In each district is stationed a Land Agent, competent to give full information as to land available, rainfall, water supply, etc. Any application for land, accompanied by the required deposit, must be made to the Crown Land Agent of the district in which the land is situated, and will in due course come before the Local Land Board, from whose decision, however, an appeal may be made to the Land Appeal Court. The latter consists of a President and two Commissioners appointed by the Executive, and its decisions have the force of judgments of the Supreme Court.

4. **Modes of Tenure.**—Under the Acts at present in force the following are the chief methods of land tenure:—(1) Residential conditional purchase; (2) non-residential conditional purchase; (3) conditional lease; (4) homestead selection; (5) conditional purchase lease; (6) settlement lease; (7) settlement purchase; (8) closer settlement annual lease; (9) improvement lease; (10) annual lease; (11) residential lease; (12) special lease; (13) snow lease; and (14) improvement purchase.

(i.) *Residential Conditional Purchase.* Any vacant Crown lands in the "Eastern Division" and "Central Division" are available for conditional purchase, but only those set apart by proclamation as special areas are open in the "Western Division." For a holding of this class an applicant must be not less than sixteen years of age, and must pay on application both the prescribed deposit and a survey fee according to a fixed scale. The area which may be selected depends upon the division in which the land is situated. In the Eastern Division the minimum and maximum areas are respectively 40 and 640 acres; in the Central 40 and 2560 acres; and in a special area the maximum is 640 acres. The deposit is 10 per cent. of the price of the land, which is ordinarily available at the statutory value of £1 an acre, subject to the applicant's right to apply for an appraisement where he considers such price excessive. At the end of the third year from the date of application the purchaser must pay an instalment of 5 per cent. of the price of the land. This instalment includes interest at the rate of 2½ per cent. on the outstanding balance of the purchase-money due to the Crown, and he must continue to pay a similar instalment annually until such balance and interest have been paid off.

The following conditions are attached to the holding, viz.:—That it must be fenced within three years, or be improved to the value of six shillings an acre within the same period, and to the value of ten shillings an acre at the end of the first five years. The settler must commence to reside on his holding within three months from the date of the confirmation of his application by the Land Board, and continue to do so for a period of ten years from the date of application, but for sufficient reason this condition may be suspended. Minors taking up land adjoining the selection of their parents may fulfil the condition of residence under the paternal roof until the age of twenty-one in the case of males and of twenty-four in the case of females. The conditional purchase may be transferred after the issue of the first certificate of fulfilment of conditions. This certificate will be issued at the expiration of five years from the date of application if the required conditions have been fulfilled up to that date, and if the holding be transferred the transferee must reside thereon during the remainder of the unexpired residence term of ten years.

The holder of a conditional purchase may at any time, if land be available, apply for an additional conditional purchase (of unclassified land) the area of which, together with that of the original holding, may not exceed the maximum limits stated above. The Crown Lands Act of 1903, however, provides that the areas specified may be exceeded by allowing an applicant to acquire additional holdings of classified land, the area of which, together with that of all other lands held by the applicant other than under annual tenure, must not exceed such an area as, in the opinion of the Land Board, is sufficient for the maintenance of his home thereon in average seasons and circumstances. The additional holdings need not be contiguous to the original holding, but must be within reasonable working distance thereof.

(ii.) *Non-residential Conditional Purchase.* When land is conditionally purchased without residence the maximum area obtainable is 320 acres, and the minimum 40 acres. The price, deposit, and annual instalments are double those required under residential conditions. The selection must be enclosed with a fence within twelve months from the date of confirmation of application, and within five years improvements must be made to the value of £1 an acre, or, with the permission of the Local Board, other improvements to the value of thirty shillings an acre may be substituted for fencing. No person under twenty-one years of age may select land on non-residential terms, and anyone who has made a non-residential conditional purchase is not allowed to make any other conditional purchase.

(iii.) *Conditional Leases.* Conditional leases may be granted to any selector of a conditional purchase, other than a non-residential one, or one whose selection is within a special area. In other words, before applying for a conditional lease it is necessary to apply for a residential conditional purchase, in virtue of which such a lease may be held. The provisional deposit with application is, if the amount of rent has been notified prior to the date of application, a sum equal to half a year's rent, and if not so notified, is at the rate of twopence an acre, but is subject to appraisement by the Local Board. A survey fee in accordance with a fixed scale must also be lodged with the application.

The area of land which may be conditionally leased must not be less than 40 acres, nor more than three times the area of the conditional purchase, and the two together must not amount to more than 1280 acres in the Eastern, or 2560 acres in the Central Division, except in cases where the Land Board has allowed either of these areas to be exceeded by virtue of the power vested in them under the Crown Lands Act 1903, as stated above. The lease is for a period of forty years, and this term is divided into four periods of ten years each. The annual rent for each period may, on application by the lessee, or on a reference by the Minister, be separately determined by appraisement in accordance with sec. 6 of the Crown Lands Act of 1889. The lessee may at any time during the currency of the lease convert the whole or part into an additional conditional purchase.

(iv.) *Homestead Selection.* Under a principle of classification and measurement introduced by the Act of 1895 suitable land may be classified for homestead selection. The areas set apart for this purpose are either good agricultural lands, divided into blocks, each large enough for one family, or suitable lands, within easy access of towns, divided to suit the requirements of business people. Conditions as to area of blocks, capital value, etc., are published in the *Gazette*, and the selector is limited to one block, as gazetted, the area of which must not be greater than 1280 acres. The selector must reside continuously on the land for five years, on the expiration of which a grant will be issued to him. After the issue of the grant he must continue to reside on the holding for at least seven months in the year. The annual rent for the first six years will be an amount equal to 1¼ per cent. of the capital value of the land, after which the rent will be increased to 2½ per cent. of the capital value, which is determined according to the character and situation of the holding, and is subject to reappraisement every ten years. Should an area granted under this tenure be found to be insufficient for the maintenance of a home in average seasons and circumstances, it may be increased to a home maintenance area by additional homestead selection. The additional holding need not necessarily adjoin the original holding, but must, in the opinion of the Land Board, be situated within a reasonable working distance thereof. Any person who is eligible to take up a conditional purchase may apply for a homestead selection. The incoming tenant must pay for improvements at a price to be determined by the Land Board, but if the appraised value of such improvements be greater than 20 per cent. of the estimated value of the land as notified in the *Gazette*, the applicant may withdraw his application and obtain a refund of all moneys paid. Tenant right in improvements is secured, and the holding may be so protected that it cannot, under any circumstances, be taken from the selector. Holders of conditional purchases may convert their holdings into homestead selections.

(v.) *Conditional Purchase Lease.* This tenure was created by the Crown Lands Amendment Act of 1905, and its chief advantages are that the intending settler can for a small initial outlay by way of deposit, for a moderate rent and under easy conditions, obtain a lease for forty years, together with a right of converting it into a conditional purchase at any time during its currency, and ultimately into a freehold. These leases can only be acquired within areas subdivided and specially set apart by proclamation in the *Government Gazette* for holdings of this class, and an applicant, if a male, must not be under the age of eighteen years, or of twenty-one years, if a female. No one may apply who already holds any land, other than town or suburban land under the Crown Lands Acts, or land leased from a private individual, or who is either disqualified under the provisions of sec. 40 of the Crown Lands Act of 1895, or is subject to any of the disabilities specified in sec. 14 of the Act of 1905. These sections should be carefully read by intending applicants, as it is impracticable, within the limits of this summary, to fully explain all the details of the qualification clauses. The deposit, which must be lodged with an application for a conditional purchase lease, is always the half of one year's rent of the land, the rent being calculated at the rate of 2½ per cent. of the capital value of the land. The amounts of the annual rent and of the survey fee required for each block are always stated in the *Gazette*, and on the lithographs issued by the Lands Department shewing the subdivision. Only one-fifth of the survey fee need be lodged with the application, although two or more instalments of one-fifth of the full amount may be deposited, and the balance may be paid subsequently in equal annual instalments, with interest at the rate of 4 per cent. The capital value of the land is fixed by the Minister for the first ten years of the lease, but the lessee may, within six months after confirmation of his application for the lease, apply in the prescribed manner to have such capital value determined by appraisement, and for each succeeding period of ten years the capital value is determined by the Local Land Board on a similar basis.

A condition of ten years' personal continuous residence is attached to holdings of this class, and such residence must, under ordinary circumstances, be commenced within twelve months from the date of confirmation of the application, but the Local Board may, if the circumstances of the case warrant the concession, permit the commencement of residence to be extended to any date within three years of such confirmation, and on such terms and conditions as to improvements and cultivation as may be agreed upon between the Board and the lessee, and the Board may also, on application in the prescribed manner, permit the residence condition to be performed in any adjacent village or town.

(vi.) *Settlement Lease.* Under the Lands Act of 1895 provision was made for a convenient form of tenure by way of settlement leases for persons who require a considerable area for agricultural or grazing purposes, or for these purposes combined. The area which might be taken up as a settlement lease was originally limited to 1280 acres for agricultural and to 10,240 acres for grazing purposes, but provision has now been made under which larger areas may be taken as additional settlement leases, in cases where the Local Land Board is of the opinion that the area sought to be acquired, together with other lands held by the applicant, does not in the aggregate exceed such an area as is sufficient to enable him to maintain his home thereon in average seasons and under ordinary circumstances. The additional holding need not necessarily adjoin the original holding, but must, in the opinion of the Board, be situated within a reasonable working distance thereof. The lease is for a term of forty years, which is divided into four periods of ten years each. The annual rent for the first ten years is fixed by the Minister before the land is made available for lease, and the lessee may, if dissatisfied with the amount, apply to have it determined by appraisement. The rent for each succeeding period of ten years may, on the application of the lessee or on a reference by the Minister, be separately determined in a similar manner. The lessee must make the holding his *bonâ-fide* residence during the whole term of the lease. He must fence the holding within five years, must conform to any regulations made by the Minister for the destruction of vermin, noxious weeds, scrub, etc., and may not assign or sublet his holding without the Minister's consent. Tenant right in improvements is secured to an outgoing lessee, and the lessee may apply at any time after the first five years of the lease for an area not exceeding 1280 acres, on which his house is situated, as a homestead grant.

(vii.) *Closer Settlement Purchase.* Under the Closer Settlement Act of 1901 provision was made for the acquisition of private lands or of Crown lands held under lease, for the purpose of closer settlement. No power of compulsory resumption was conferred by the Act, which was consequently practically inoperative. Under the Closer Settlement Act of 1904, as amended in 1906, the Government is empowered to resume private lands, either by agreement or by compulsory purchase, and to alienate them on favourable terms to persons who desire to settle and make homes for themselves and their families on the soil. Land acquired under the Act is subdivided into blocks or farms, and by notification in the *Government Gazette* is declared to be a Settlement Purchase Area available for application. The *Gazette* notice also gives all necessary information as to the class and character of the land, and the capital value, area, etc., of each block or farm.

A male applicant must not be under the age of eighteen years, or a female twenty-one years. A deposit of 5 per cent. of the notified value of the settlement purchase must be lodged with the application, and a similar amount by way of instalment, paid annually until the purchase money, together with interest at the rate of 4 per cent., is paid off. Under this system the balance due to the Crown will be paid off in thirty-eight years, the holding then becoming a freehold. A condition of residence for ten years attaches to every settlement purchase, and the purchaser must commence to reside on his holding within twelve months after the date of the Land Board's decision allowing the purchase, unless the commencement of residence is extended to some date within five years from the date of purchase, on such terms and conditions as to improvements and cultivation as may be agreed on between the Local Board and the purchaser. With the Board's permission, residence, which may be either conditional or unconditional, may be performed in any adjacent village or town.

(viii.) *Closer Settlement Annual Leases.* Leases for areas not exceeding 320 acres may be obtained under the Closer Settlement Acts, subject to such conditions as the Governor may prescribe. Land so leased may not be improved without the written consent of the Minister, or of the Chairman of the Local Land Board, which Board fixes the annual rent. These leases expire on the 31st day of December of the year in which they are granted, but may be renewed from year to year on payment of the yearly rent in advance, not later than the 10th December of each year. The granting of a lease of this kind will not exempt the land held thereunder from being granted as a settlement purchase, and on a valid application for a settlement purchase the lease of so much of the land as is applied for is thereby determined from the date of that application. In such cases the rent will be adjusted, and any balance paid in excess refunded. The Minister has power to cancel the lease at any time by giving not less than three months' notice in writing in the *Gazette* of his intention to do so.

(ix.) *Improvement Leases.* Improvement leases may comprise any scrub or inferior land in the Eastern or Central Divisions, and can only be let by auction or tender, or, if not taken up, may be tendered for afterwards at the upset rental. Leases of large areas at moderate rentals can be obtained of lands which are not suitable for settlement until improved, and in the improvement of which it would be necessary to spend large sums, before they could be rendered suitable for settlement. The lease is for a term of twenty-eight years, the rent being payable annually. During the last year of the lease, the lessee may convert into a homestead selection 640 acres, on which his dwelling-house may be erected; he has tenant right in improvements.

(x.) *Annual Leases.* These are leases from year to year, renewable by payment of a year's rent in advance before the termination of the current year. The area is restricted to 1920 acres under any one lease, but there is no limit to the number of leases which one individual may hold. The deposit is thirty shillings for each 320 acres or part thereof applied for, and the annual rent is as appraised and notified in the *Gazette.* No conditions as to residence or improvements are attached to these leases, but security of tenure is not guaranteed, and the land may be alienated by conditional purchase or lease, etc.

(xi.) *Residential Leases.* Only lands situated within proclaimed gold or mineral fields are available for holdings of this class. An applicant must be a holder of what is termed a "miner's right," or "mineral license," and must pay a deposit of £1, a provisional rental of one shilling per acre applied for, and the survey fee. The maximum area that may be leased is twenty acres, and the term may not exceed twenty-eight years. The annual rent will be appraised by the Local Land Board, and a condition of perpetual residence is attached to the lease. Within twelve months from the commencement of the lease, fences and buildings of a character suitable for the beneficial occupation of the land must be erected. Tenant right in improvements is conferred upon the lessee.

(xii.) *Special Leases.* These leases are issued chiefly to meet cases where land is required for some industrial or business purpose, or for such purpose as the Governor, by proclamation in the *Gazette*, may declare, such as the erection of dams, tanks, irrigation works, saw-mills, etc. The area may not exceed 320 acres, except in the case of leases under secs. 89 and 92 of the Act of 1884, for such purposes as wharves, jetties, tramways, and irrigation works, and the term of a special lease may not exceed twenty-eight years. One person may, however, hold more than one special lease. The annual rent, if the land has not been notified for lease in the *Gazette*, is determined after report by the Local Board. Special leases may be obtained either by application, purchase at auction, or by tender. If the lease be sold at auction or let by tender, the rent will be the amount bid at auction, or offered by the successful tenderer, but must not be less than the upset rent. Leases of this kind which have been offered at auction and not sold, or for which tenders have been invited without any being lodged, may be obtained by application. In such cases the rent will be the upset rent as notified, and the application will be subject to the approval of the Minister.

(xiii.) *Snow Leases.* Lands not held under pastoral or other lease, which may be usually covered with snow for a part of each year, and which are consequently unfit for continuous occupation, may be leased in areas of not less than 1280 acres, nor more than 10,240 acres, and during the currency of such lease the land is exempt from sale or from other lease under the Lands Acts. Such leases are sold by auction or let by tender for terms not exceeding seven years, but may be extended for a term of three years by giving twelve months' notice prior to the expiration of the lease. The upset rental is fixed by the

Minister after report by the Local Land Board, and the annual rent payable will be the amount bid at auction or tendered. If the lease be applied for after auction or after the time for lodging tenders has expired, the amount will be the notified upset rent.

(xiv.) *Improvement Purchases.* Only lands within proclaimed goldfields are available for improvement purchase. The areas which may be acquired in this manner may not exceed one-quarter of an acre within the boundaries of a town or village defined as such in the Mining Act, or two acres of land outside such boundaries. The price of the land is fixed by the Local Board, and must not be less than at the rate of £8 per acre for town lands, and £2 10s. for suburban or other lands, or for any area less than one acre. The applicant must be in authorised occupation under the Mining Act of the land he applies for, and must be the owner of the improvements thereon in virtue of which his application is made, and such improvements must be of value equal to the respective minimum rates above mentioned, *i.e.*, £8 an acre for town lands, and £2 10s. an acre for suburban or other lands, or for an area less than one acre. No person who has made an improvement purchase may make a subsequent purchase of the same kind within three miles of a prior purchase by him.

5. **Western Division.**—By the Western Lands Act of 1901, all land in the Western Division has been placed under the control of three Commissioners, who are styled the Western Land Board, and in this division the jurisdiction of all Local Land Boards constituted prior to the 1st January, 1902, ceases. The Commissioners are authorised to exercise all the powers conferred upon the Local Land Boards by the Crown Lands Acts. Before any land in the division, not held under lease, can become available for lease, the Commissioners must specify the boundaries and area of the land to be offered and the rent to be charged, and must determine the amount to be paid for existing improvements.

(i.) *Modes of Tenure.* Subject to existing rights and to the extension of tenure referred to below, all forms of alienation, other than by auction and leases, prescribed by the Crown Lands Acts, ceased to operate within this division from the 1st January, 1902.

(ii.) *General Provisions.* The registered holder of a lease of any description or of an occupation license of land could bring his lease or license within the provisions of the Western Lands Act, by application before the 30th June, 1902. If he did not so apply the lease or license is dealt with as if the Act had not been passed, and the Commissioners are to be deemed to be the Local Land Board to deal with such cases. All leases issued or brought under the provisions of the Western Lands Act expire on the 30th June, 1943, except in cases where part of the land leased is withdrawn for the purpose of sale by auction or to provide small holdings, in which case the Governor may add to the remainder of the lease a term, not exceeding six years, as compensation for the part withdrawn.

(iii.) *Applications and Rents for Leases.* Lands are declared open for lease by notice in the *Government Gazette*, and applications therefor may be made in the prescribed form, accompanied by a deposit of 20 per cent. on the amount of the first year's rent. Within one month from the date of issue of the lease the successful applicant must pay the balance of the first year's rent and execute the lease. The annual rent is determined by the Commissioners for periods not exceeding ten years, and the rent fixed for the first period cannot on reappraisement be either increased or decreased more than 25 per cent. on the first reappraisement, and this provision applies at each subsequent reappraisement to the rent last determined.

6. **Areas Alienated Absolutely and in Process of Alienation, 1901 to 1906.**—Particulars as to the conditional and unconditional alienation of land, and as to the areas in process of conditional and unconditional alienation on the 31st December in each year, from 1901 to 1904 inclusive, and on the 30th June, 1906, are summarised in the subjoined statement. The areas specified are given up to, and from the year 1862, when Robertson's Act came into operation.

NEW SOUTH WALES.—AREA ALIENATED AND IN PROCESS OF ALIENATION UP TO THE END OF EACH YEAR FROM 1901 TO 1904 INCLUSIVE, AND ON THE 30TH JUNE, 1906.[1]

Particulars.	Area in Acres.				
	1901.	1902.	1903.	1904.	1905-6.
1. AREA ALIENATED—					
Area granted and sold by private tender and public auction, at prices ranging from five to twenty shillings per acre, prior to 1862 ...	7,146,57	7,146,57	7,146,57	7,146,579	7,146,579
Area sold by auction and other forms of sale from 1862 to date	14,638,88	14,690,64	14,731,79	14,783,302	14,841.958
Area conditionally sold from 1862 to date ...	4,212,18	5,217,58	6,010,02	6,969,625	9,002,561
Area granted under Volunteer Land Regulations, 1867, to date	168,54	168,59	168,64	168,745	169,164
Area granted for public and religious purposes	241,96	240,80	235,943	237,233	238,759
Homestead grants	35,38	194,70	472,175	662,833	1,087,065
Total area alienated	26,443,55	27,658,901	28,765,09	29,968,317	32,486,086
2. AREA IN PROCESS OF ALIENATION—					
Under system of deferred payments... ...	20,044,703	19,369,02	18,823,66	18,100,517	16,499,823
Under system of homestead selections (including leases converted, but excluding grants issued)	1,515,60	1,479,264	1,262,774	1,195,970	984,426
Total area alienated and in process of alienation...	48,003,857	48,507,192	48,851,524	49,264,804	49,970,335

7. **Areas Occupied under Leases and Licenses for Pastoral and Other Purposes, 1901 to 1905.**—The following table shews the areas held under various descriptions of leases and licenses at the end of each year from 1901 to 1904 inclusive, and on the 30th June, 1906:—

NEW SOUTH WALES.—AREAS OCCUPIED UNDER LEASES AND LICENSES AT THE END OF EACH YEAR FROM 1901 TO 1904 INCLUSIVE, AND ON THE 30TH JUNE, 1906.[1]

Leases and Licenses.	Area in Acres.				
	1901.	1902.	1903.	1904.	1905-6.
Pastoral...	44,805,221	44.976,148	20,332,042	9,191,101	3,668,661
Leases to outgoing pastoral lessees ...	—	—	—	135,225	656,340
Western land leases	—	223,689	27,922,498	58,684,786	66,307,201
Occupation licenses—(i.) Ordinary	25.812,215	25,695,215	24,582,802	9,964,239	9.039,134
(ii.) Preferential	12,985,651	12.535,523	9.777,274	7,206,504	5,138,496
Homestead leases	10,953,388	10,692,748	6,540,407	4,039,272	2,616,472
Conditional leases—(i.) Gazetted	13,014,055	13,262.618	13,696,779	13,974,188	14,798,801
(ii.) Not gazetted (under provisional rent)	966,887	1,076,863	1,053,569	278,224	977,850
Conditional purchase leases	—	—	—	—	30,598
Settlement leases	3,468.675	4,036,919	4.203,058	4,399,579	5.113,847
Improvement „	5,551,060	7,062,865	7,951,340	6,196,133	6,275,183
Annual „	6,755,942	8,537,921	8,687,837	6,229,923	5,846.127
Scrub „	1,535,415	1,825,043	1,958,406	2,010,867	2,029,949
Snow land „	70,582	78,532	66.122	49,822	45,812
Special „	124,877	159,845	200,128	217,741	252.525
Inferior land „	288,530	354,030	365.930	243,230	247,330
Artesian well „	358,071	368,311	368,311	378,551	378,551
Blockholders' „	—	12	9	8	7
Residential leases (on gold and mineral fields)	5,751	6,131	6,749	7,571	9,017
Church and school lands	97,207	75,112	61,035	58,298	51,979
Permissive occupancies	118,634	682,064	560,122	637,671	604,445
Total under Lands Department and Western Land Board	126,921,161	131,649,639	128,334,418	123,902,933	124,088,680
Mineral and auriferous leases (Mines Department)	136,151	131,742	127,553	124,076	148,351
Total leases under all Government Departments	127,057,312	131,781,381	128,461,971	124,027,009	124,237,031

1. See remarks on next page.

The total area held under leases and licenses on the 31st December, 1904, was 124,027,009 acres (including leases issued under the Mining Act), and the corresponding area on the 30th June, 1906, was 124,237,081 acres.

The figures given in the two preceding tables are as up to the 30th June instead of as up to 31st December; 1905 figures are therefore omitted. Corresponding figures for previous years may be obtained from the Statistical Registers of the State of New South Wales.

8. **Classification of Holdings of One Acre and over in Extent according to Size.**—The following table shews the number and size of holdings alienated absolutely and in process of alienation for the years ended 31st March, 1901 to 1906, inclusive, together with the total area occupied by each class on 31st March, 1906:—

NEW SOUTH WALES.—CLASSIFICATION ACCORDING TO SIZE OF HOLDINGS ALIENATED AND IN PROCESS OF ALIENATION FOR EACH YEAR ENDED THE 31ST MARCH, 1901 TO 1906, TOGETHER WITH THE TOTAL AREA OCCUPIED BY EACH CLASS ON 31ST MARCH, 1906.

Size of Holdings.	1901.	1902.	1903.	1904.	1905.	1906.	
						Number.	Area.
Acres.	Number	Number	Number	Number	Number		Acres
1 to 5	11,460	12,190	12,824	13,290	13,955	14,365	36,100
6 " 15	5,806	6,017	6,132	6,484	6,629	6,905	65,984
16 " 30	3,813	3,821	3 913	4,047	4,056	4,045	91,827
31 " 50	7,076	7,076	7,037	7,143	7,094	7,098	294,711
51 " 100	8,929	8,884	8,695	9,064	9,108	9,217	729,306
101 " 200	9,407	9,479	9,648	9,863	10,003	10,042	1,516,938
201 " 300	4,705	4,789	4,813	5,012	5,117	5,254	1,319,307
301 " 400	4,146	4,141	4,256	4,379	4,465	4,536	1,561,602
401 " 500	2,246	2,238	2,278	2 322	2,404	2,436	1,110,555
501 " 600	1,491	1,565	1,577	1,565	1,617	1,658	916,872
601 " 700	2,382	2,402	2,388	2,430	2,458	2,442	1,577,234
701 " 800	890	973	955	979	1,015	1,034	780,272
801 " 900	677	682	702	711	765	796	679,623
901 " 1,000	665	693	734	755	752	805	771,719
1,001 " 1,500	1,939	2,021	2,079	2,160	2,234	2,391	2 949,188
1,501 " 2,000	872	887	882	886	927	972	1,705,726
2,001 " 3,000	920	946	939	952	983	1,024	2,519,534
3,001 " 4,000	446	452	475	475	488	491	1,701,921
4,001 " 5,000	287	278	286	291	296	307	1 384,241
5,001 " 7,500	356	348	352	356	350	362	2,210,914
7,501 " 10,000	223	228	224	234	234	236	2,070,053
10,001 " 15,000	213	224	234	227	216	216	2 658,641
15,001 " 20,000	139	138	144	144	141	140	2,451,954
20,001 " 30,000	139	148	152	152	155	150	3,699,219
30,001 " 40,000	63	59	55	56	55	63	2,197,001
40,001 " 50,000	—	40	43	40	46	41	1,843,419
40,001 and upwards ...	149	—	—	—	—	—	—
50,001 and upwards ...	—	110	110	111	109	110	9,884,591
Total	69,439	70,829	72,127	74,128	75,672	77,136	48,728,542

9. **Area Acquired and Disposed of for Purposes of Closer Settlement, 1901 to 1906.**—Up to the 30th June, 1906, only one area had been opened for settlement under the Closer Settlement Acts. The total extent of this area, which is known as the Myall Creek Settlement Purchase Area No. 1, is 74,500 acres, of which 53,929 acres were purchased in 1904, at a price of £2 11s. 6d. per acre, the remaining 20,571 acres being unoccupied Crown lands, while the whole area was made available for closer settlement on the 25th April, 1905. The following table shews the manner of disposal of the land comprised in this area:—

NEW SOUTH WALES.—MANNER OF DISPOSAL OF LANDS ACQUIRED FOR CLOSER SETTLEMENT UP TO THE 30TH JUNE, 1906.

Manner of Disposal.		Particulars of Lands comprised in Farms.					
		Areas.			Values.		
Set apart for—	Areas.	Acquired Lands.	Crown Lands.	Total.	Acquired Lands.	Crown Lands.	Total.
	Acres.	Acres.	Acres.	Acres.	£	£	£
138 farms	66,689	53,523	13,166	66,689	137,795	24,588	162,383
Travelling stock route ...	3,800	...	...	...	...	...	...
Travelling stock and camping reserve	1,620	...	...	...	...	...	...
Water reserve	75	...	...	...	...	...	...
Township	111	...	...	...	...	...	...
Gravel reserves	80	...	...	...	...	...	...
Public School reserves ...	8	...	...	...	...	...	...
Roads (by deduction) ...	2,062	...	...	...	...	...	...
Balance (not apportioned)...	55	...	...	...	...	...	...
Total	74,500	53,523	13,166	66,689	137,795	24,588	162,388

The following table gives particulars as to the disposal of Myall Creek farms for the years ended 30th June, 1905 and 1906, respectively:—

NEW SOUTH WALES.—PARTICULARS OF CLOSER SETTLEMENT ALLOTMENTS GRANTED UP TO THE 30TH JUNE, 1905 AND 1906.

Year.	Particulars of Area Allotted by Board to Date.						Total Amount received in respect of Settlement Purchases.	Number of Farms.	Number of Applications received.
	Areas.			Values.					
	Acquired Lands	Crown Lands	Total.	Acquired Lands.	Crown Lands.	Total.			
	Acres.	Acres.	Acres.	£	£	£	£		
1904-5	16,935	1,633	18,568	52,620	3,615	56,235	2,817	49	50
1905-6	39,142	9,425	48,567	102,657	17,788	120,445	6,560	98	120

In addition to the above settlement purchases 47 annual leases have been granted on the Myall Creek area, at rentals ranging from 3d. to 1s. 6d. per acre.

10. **General Summary of Lands in the State of New South Wales.**—The following figures give the general condition of the public estate in New South Wales on the 30th June, 1906:—

	Acres.
Area alienated	32,486,086
„ in process of alienation	17,484,249
„ under lease—Eastern Division	13,552,191
„ „ „ Central „	21,158,662
„ „ „ Western „	59,458,352
„ „ occupation license—Eastern Division ...	8,215,926
„ „ „ „ Central „ ...	5,709,596
„ „ „ „ Western „ ...	13,717,230
„ „ permissive occupancy—Eastern Division ...	41,767
„ „ „ „ Central „ ...	562,628
„ „ „ „ Western „ ...	694,479
Area of leases not gazetted	1,126,200
Total area occupied	174,207,366
Area unoccupied	24,430,714
Area of State	198,638,080

§ 3. Victoria.

1. **Settlement in Early Days.**—The early history of land settlement in Victoria is intimately bound up with that of New South Wales. For the first fifteen years of its existence, during which period it was known as the District of Port Phillip, the alienation of Crown lands was regulated by the Orders in Council of the mother State, to which orders reference has already been made. In the month of September, 1386, the Port Phillip district was proclaimed open to settlement, and the principle of the sale of unoccupied land by auction was introduced. In the year 1840 the upset price of country lands, in New South Wales limited to twelve shillings per acre, was specially raised to twenty shillings per acre in the Port Phillip district.

2. **History of Land Legislation.**—The Orders in Council made under the Imperial Acts of 1842 and 1847, referred to above, remained in force until 1860, when an Act was passed by the Victorian Government, which, after making provision for special reserves for mineral purposes, etc., divided all Crown lands into country and special classes. The former were available after survey for selection in allotments of from forty to sixty acres. Application for these blocks had to be accompanied by a deposit of £1 an acre, and the successful applicant had the option of paying for half the allotment in cash, or taking the whole upon the same conditions, but if he only took half he might rent the other half for a term specified in the proclamation at the rate of one shilling per acre per annum, with the right to purchase at any time during the term. Special lands, situated near towns, railways, rivers, etc., were sold quarterly by auction at an upset price of £1 an acre. In 1862 free selection before survey was introduced by Duffy's Act, which provided for the setting apart of large agricultural areas, within which land could be selected at a uniform price of £1 an acre. Alternative conditions were imposed to the effect that certain improvements should be effected, or that part of the land should be placed in cultivation, and modifications were introduced as to the mode of payment. As regards pastoral lands, license fees and assessments on stock were abolished, and provision was made for the payment of rent for runs according to their value, based on their stock-carrying capacity.

The next legislation on the subject of land settlement was in 1869, in which year a Land Act and a Pastoral Act were passed, consolidating and amending all previous land legislation. The system of free selection before survey, as applied to all unoccupied Crown lands, was retained, but the selected area was limited to 320 acres, and was at the outset to be held under license for a term of three years, during the first two and a-half years of which the selector had to reside on the land, fence it, and cultivate a certain proportion of it. The rent was fixed at two shillings an acre per annum, and at the end of the period of license the selector could, if all conditions had been complied with, either purchase the land outright at the rate of £1 an acre, or he might obtain a further lease for seven years, with the right to purchase the land at any time during the term, all money paid as rent being credited towards the purchase price. The Pastoral Act of 1869 provided for the occupation of land for pastoral purposes under two systems, either as runs under license or lease or under grazing rights. The Land Act of 1869 was amended in 1878, when the conditions of selection were greatly restricted, the immediate effect being a considerable falling-off in the areas taken up. The period of license was increased to six years, and the selector had to reside on his land for a period of five years.

3. **Lands Acts now in Force.**—In 1883 the portion of the public domain known as the "Mallee Scrub," comprising about eleven million acres, was separately dealt with by the Mallee Pastoral Leases Act, and in 1884 the whole system of land occupation and alienation, except as regards mallee lands, was altered. This measure, as well as the special enactment just referred to, was again modified by the Acts of 1890, 1891, 1893, 1896, 1898, and 1900, the whole being consolidated in the Land Act 1901, which came into force on the 31st December of that year, which has, however, been modified by the

amending Acts of 1903, 1904, and 1905. The subject of closer settlement was dealt with in the Closer Settlement Act of 1898, amended in 1904 and 1906.

The Land Act of 1839 is inoperative as to future selections, but concessions as to payment of arrears of rent, the option of converting their present leases into perpetual leases, and of surrendering part of and obtaining new leases on better terms for the balance of their holdings, have been granted to selectors thereunder by the recent legislation.

4. **Administration and Classification of Lands.**—For the purposes of land administration the State is divided into seventeen districts, in each of which there is a Land Office under the management of a land officer. Intending selectors can obtain from these officers full information as to the locality and description of lands available for settlement. The whole of the unalienated lands belonging to the Crown are divided into the following classes:—(1) Good agricultural or grazing lands, situated chiefly in the central southern districts; (2) lands to a large extent suitable for grazing, but which in parts are also suitable for cultivation, vineyards and orchards—land of this class is fairly distributed throughout the State; (3) grazing lands, which are situated in nearly every county; (4) inferior grazing lands, situated chiefly in the extreme eastern and western districts of the State; (5) pastoral lands (large) areas; (6) swamp or reclaimed lands; (7) lands which may be sold by auction (not including swamp or reclaimed lands); (8) auriferous lands; (9) State forest reserves; (10) timber reserves; and (11) water reserves.

Provision is made in the Land Acts for the reclassification of lands, where it is considered that any land in either of the first five classes is too highly classed, or if any land in the second to the fifth classes is not classed high enough. For this purpose, Land Classification Boards, each consisting of three members, who are officers of the Lands Department, or other competent persons, are constituted. The classification of any land cannot, however, be altered after an application to select the same has been granted.

The Amendment Act of 1903 introduced amendments as regards the classification of unalienated Crown lands. The Act of 1904 altered the amount to be expended on improvements in the case of agricultural and grazing allotments, and makes certain amendments with regard to the powers of perpetual leases of mallee lands. The Act of 1905 deals principally with the conditions upon which bee range areas may be declared and bee farm site licenses granted.

5. **Modes of Tenure.**—Land may be acquired by various methods, and under various tenures, according to the class of the land, and the purpose for which it is utilised. The following are the chief modes of tenure of lands for other than mallee lands, which are considered separately hereinafter:— (i.) pastoral leases; (ii.) grazing area leases; (iii.) agricultural allotments; (iv.) grazing allotments; (v.) perpetual leases; (vi.) leases of auriferous lands; (vii.) sales by auction; (viii.) leases of swamp or reclaimed lands; (ix.) State forests, timber and water reserves licenses; (x.) leases and licenses for other than pastoral or agricultural purposes. Land may also be acquired for the purposes of village communities, homestead associations, labour colonies, closer settlement, and small improved holdings.

(i.) *Pastoral Leases.* Large areas of pastoral lands, chiefly in the north-eastern districts, are available for occupation, but a considerable proportion of these areas is difficult of access, being in mountainous districts, where cultivation is impossible and grazing impracticable, except during the summer months. Pastoral leases are granted to the person first making application after it has been notified that the land is available. The area which can be leased ranges from a minimum of 1920 acres to a maximum of 40,000 acres, and the term of such lease must expire not later than the 29th December, 1909. The annual rent reserved is computed according to the grazing capacity of the land, at the rate of one shilling per head of sheep, and five shillings per head of cattle, and the rent must be paid in advance every six months. The written consent of the Board must be obtained before the lessee can assign, sublet, or divide his land, and before he can use growing timber for other purposes than for erecting fences and buildings on the land. The lessee must destroy all vermin, keep down the growth of all noxious weeds, and keep all improvements in good repair. He is also required to erect swing gates in places where there is a fence across any track required by any other pastoral lessee, or by the public. The right is reserved to the Crown to take at any time any portion of the area, which may be required for railways or other public purposes, and to issue licenses to enter on the land for the purpose of obtaining timber, coal, stone, etc. The Crown also has a right to resume possession, after having given two years' notice in writing, of any land demised by a pastoral lease, upon payment to the lessee for his interest in such lease, together with the value of houses, fences, wells, reservoirs, tanks, dams, and all permanent improvements, constructed by the lessee prior to such notice, and during the currency of his lease. A lessee of pastoral land, upon compliance with all conditions, may select and obtain the freehold of a homestead out of his leasehold up to 200, 320, 640, or 960 acres of first, second, third, or fourth-class land respectively. An outgoing lessee is entitled to payment from an incoming tenant for all fences, wells, reservoirs, tanks and dams constructed during the currency of his lease, but the sum to be paid in respect of such improvements must in no case exceed two shillings and sixpence an acre of the land leased.

(ii.) *Grazing Area Leases.* Agricultural and grazing lands may be leased in "grazing areas" by any person over the age of eighteen years for any term of years expiring not later than the 29th December, 1920. The area leased must not exceed 200, 640, 1280, or 1920 acres of first, second, third, or fourth-class land respectively, but may comprise two or more grazing areas, provided that the total acreage does not exceed the limit in each class. An incoming tenant must pay for all improvements calculated to increase the stock-carrying capacity of the area, but the sum to be paid in respect of such improvements is limited to ten shillings, seven shillings and sixpence, five shillings, and two shillings and sixpence per acre for each of the four classes respectively. The annual rent is threepence an acre for first-class, twopence an acre for second, one penny an acre for third, and one halfpenny an acre for fourth-class land. The lessee must fence the land within three years, or he may, if he prove to the Board that such fence is impracticable, or is not required, expend on permanent improvements a sum equal to the cost of fencing. The rent must be paid half-yearly in advance, and the conditions as to assignment of lease, the use of growing timber, and the reservation of Crown and other rights, are the same as in the case of pastoral leases. The lessee may, if the grazing area consist of first-class land, select thereout not more than 200 acres as an "agricultural allotment;" if of second-class land, an "agricultural allotment" of 320 acres; if of third-class land, a "grazing allotment" of 640 acres; and if of fourth-class land, a "grazing allotment" of 960 acres. Any lessee of a grazing area on which no arrears of rent are due, who, in the opinion of the Board, has fulfilled the conditions and covenants of his lease, may surrender any part of such area in order that a new grazing area lease of the surrendered part may be granted to his wife or child, if qualified to become a lessee thereof, without such land being previously made generally available to the public for the purpose of being taken up as a grazing area.

(iii.) *Agricultural Allotments.* Any person over the age of eighteen years, desirous of selecting and obtaining the freehold of the land, may do so either by taking out a grazing area lease and selecting thereout, as above described, or by obtaining directly an agricultural allotment of first or second-class lands or a grazing allotment of third or fourth-class lands.

(*a*) Licenses to occupy an agricultural allotment not exceeding in the whole 200 acres of first-class land or 320 acres of second-class land are issued to any person over the age of 18 years, who has not already made a selection under the Land Acts, or has not taken up a pre-emptive right to the extent of the maximum number of acres in the first or second class (as the case may be), or who is not in respect of the license applied for an agent, servant, or trustee for any other person, or who has not, at the time of the application, entered into any agreement to permit any other person to acquire by purchase or otherwise the allotment in respect of which such application is made. The license is granted for six years at a fee of one shilling an acre per annum in the case of first-class land, and ninepence an acre per annum in the case of second-class land, payable half-yearly in advance. The licensee may not transfer, assign or sublet; he must destroy vermin on the land, and must within six years from the issue of his license enclose the land with a fence, or he may, if he prove to the satisfaction of the Board that such a fence is impracticable or is not required, expend in permanent improvements an amount equivalent to the cost of fencing. The licensee must enter into occupation within twelve months from the issue of the license, and must occupy the allotment thenceforward during the continuance of the license. Any licensee may during each year, however, absent himself from his allotment for not more than three months, by registering with the district land officer a notice of his intention to so absent himself; and if his home is situated upon the allotment the Board may consent for a specified period to substituted occupation by the wife or by a child over the age of eighteen years; or, if he has no wife or child, by the father or mother of the licensee, provided that he or she is dependent upon him for support. During the currency of the license the Crown reserves the right to resume possession of any of the land required for reserves or for public or mining purposes, subject to repayment to the licensee of all moneys paid by him as rent to the Crown, and of a reasonable sum as compensation for such resumption. Substantial and permanent improvements must be made to the value of £1 for every acre if of first-class land, or of the value of fifteen shillings for every acre if of second-class land, during the following periods and on the following basis:—If the land be first-class land, to the value of three shillings and fourpence for each acre before the end of the second year from the date of issue of the licence, another three shillings and fourpence before the end of the third year, another three shillings and fourpence before the end of the fourth year, and the balance before the end of the sixth year; if the land be second-class, to the value of two shillings and sixpence for each of the same periods as in the case of first-class land. Upon satisfying the Board that all conditions of the license have been fulfilled, the licensee is entitled at any time within twelve months after six years from the commencement of the license to obtain a grant upon payment of fourteen shillings an acre if first-class land or ten shillings and sixpence an acre if second-class land; or otherwise he may obtain a lease of the allotment for a term of fourteen years at a rental of one shilling an acre if first-class land or ninepence an acre if second-class land. The lessee is entitled upon payment at the end of the term of the last instalment due on account of the rent reserved, or at any time during the currency of the lease by payment of the difference between the amount of rent actually paid and the entire sum payable for the purchase of the land, to obtain a grant in fee of the lands leased.

(*b*) Non-residential licenses for a period of six years are issued to persons similarly qualified, on conditions identical with the above, with the exception that the improvements which must be effected, are to the value of six shillings and eightpence an acre for each year of the license in the case of first-class land, and five shillings an acre for each of the first three years of the license in respect of second-class land. During any one year non-residential licenses may not be issued for more than 50,000 acres.

(*c*) Residential licenses are also granted, subject to the same covenants and conditions as stated above with respect to residential licenses, but varied with regard to the term and to the amount of the fee and rent reserved, as follows:—The fee for occupation to be sixpence or fourpence halfpenny an acre per annum in the case respectively of first or second-class land, the term of a lease to be thirty-four years' annual rent of the same amounts, for the respective classes of land. Any person entitled to apply to select land as an agricultural allotment, may apply to select such allotment under perpetual lease (see below). Any person may become the licensee of more than one agricultural or grazing allotment, provided the total acreage does not exceed the limit for its class of land, but no selector may pick out the best or any part of an allotment, leaving the balance unselected, and afterwards apply for an agricultural allotment elsewhere.

(iv.) *Grazing Allotments.* Either residential or non-residential licenses for grazing allotments are issued to persons qualified similarly to those entitled to take up agricultural allotments. The area of a grazing allotment must not exceed 640 acres of third-class, or 960 acres of fourth-class land; the period of license is six years at an annual occupation fee of sixpence or fourpence an acre in the case of third or fourth-class land respectively. In case of a residential license, the licensee must enter into occupation within six months after its issue, and must occupy the allotment thenceforward during its continuance. Temporary absence from occupation and substituted occupation are allowed on the same grounds as in the case of agricultural allotments. A licensee of a grazing allotment cannot assign, transfer, or sublet; he must destroy vermin, and within six years from the date of issue of his license must enclose the land with a fence, or if not required or impracticable, expend a sum equivalent to the cost of fencing in permanent improvements. The Crown reserves the right to resume possession of the whole or of any part of the land, during the currency of the license, that may be required for public or for mining purposes, subject to the repayment of any moneys paid by the licensee to the Crown and of a reasonable sum as compensation. Permanent improvements must, in respect of residential licenses, be effected to the value of ten shillings an acre on third or five shillings an acre on fourth-class lands. In respect of non-residential licenses, improvements must be effected during the following periods and on the following basis:—If the land be third-class, to the value of five shillings for every acre before the end of the third year, and the balance before the end of the sixth year; and if the land be fourth-class, to the value of two shillings and sixpence an acre for each of the same periods as in the case of third-class land. If the conditions be complied with the licensee is entitled, at any time within twelve months after six years from the commencement of the license, to obtain a grant in fee upon payment of seven shillings an acre if third-class land, or three shillings and sixpence if fourth-class land; or otherwise he may obtain a lease of the allotment for a term of fourteen years at a rental of sixpence an acre per annum if third-class land, or of half that amount if fourth-class land. Residential licenses for grazing allotments are also granted subject to the same terms, conditions, and covenants stated above with respect to residential grazing allotments, but varied with regard to the term, and the annual fee and rent reserved, as follows:—The fee for occupation is threepence, or three halfpence an acre in the case of third and fourth-class lands respectively; and where a lease is obtained such lease is for a term of thirty-four years at a yearly rental of threepence, or three halfpence for third or fourth-class lands respectively. Any person entitled to select a grazing allotment, instead of obtaining a grazing allotment license for his selection, may apply for a perpetual lease of the allotment in lieu thereof.

(v.) *Perpetual Leases.* Perpetual leases of any Crown lands available as agricultural or grazing allotments, over swamp and reclaimed lands, and over mallee lands available as agricultural allotments, may be granted—(*a*) to holders of grazing areas, who are entitled to select thereout an agricultural or grazing allotment; (*b*) to holders of licenses or leases to occupy allotments on swamp or reclaimed land; (*c*) to holders of mallee allotments, who are entitled to select thereout an agricultural allotment; or, (*d*) to village settlers under a lease or license of any land which is swamp or reclaimed land, who may desire to surrender the same and obtain a perpetual lease in lieu thereof. No person may hold under perpetual lease directly, or by transfer or otherwise, more than 600 acres of first-class, 960 acres of second, 1920 acres of third, or 2880 acres of fourth-class land outside the mallee district. The lessee must destroy all vermin within two years, and must within six years from the date of issue of the lease enclose his land with a fence and keep the same in repair, or, if proved to the satisfaction of the Board that the erection of such fence is impracticable or not necessary, may expend on permanent improvements a sum equal to the cost of fencing. The lessee must reside on the land, or within five miles thereof, for at least six months during the first year of his term, and for at least eight months during each of the following four years; but this covenant as to residence does not operate in the event of the cultivation by the lessee of at least one-fourth of his allotment within the first two years of his lease, and at least one-half thereof before the end of the fourth year. Permanent improvements must be made to the value of ten shillings an acre for first-class land, seven shillings and sixpence an acre for second-class land, five shillings an acre for third-class land, and two shillings and sixpence an acre for fourth-class land, before the end of the third year, and further improvements to the same values before the end of the sixth year of the lease. The lessee may not transfer, assign, mortgage, sublet, or part with the possession of the whole or any part of his allotment within the first six years of his lease, but at the end of that period, if no rent be owing and all conditions have been fulfilled, the lessee may, with the written consent of the Board, transfer, mortgage, sublet, or part with the land. The Crown reserves the right to resume any part of the lands demised, required for public or mining purposes, on payment to the lessee of the cost of moving and re-erecting his improvements and the loss sustained in relinquishing improvements not removable.

The rent payable by every perpetual lessee, other than a lessee of mallee or swamp or reclaimed lands, from the date of issue of his lease until the 29th December, 1909, is 4 per cent. on the unimproved value of the land, which is deemed to be twenty shillings an acre for first-class, fifteen shillings an acre for second-class, ten shillings an acre for third-class, and five shillings an acre for fourth-class land. For every successive period of ten years the unimproved value will be fixed by the Board, and the rent will be 1½ per cent. of such value. The rent must be paid yearly in advance. Any lessee whose rent is not in arrear may surrender his lease by making written application to the Board within six months after the expiration of a period of ten years from the 29th December, 1909, or within six months after any successive period of ten years, and if the Board is satisfied that the applicant holds the allotment *boná-fide* for his sole use and benefit, he may obtain an agricultural or grazing allotment license (residential or non-residential). The value of all permanent improvements will be credited to the licensee.

(vi.) *Leases of Auriferous Lands.* The "auriferous lands" are distributed over various parts of the State. Annual licenses are issued for areas not exceeding twenty acres, entitling the holders to reside on or cultivate within the area upon payment of a license fee of five shillings for areas of three acres or under, ten shillings for areas from three to ten acres, and one shilling per acre for areas over ten acres. The licensee has the right to use the surface of the land only; he must either reside on or fence the land within four months from the date of issue of the license, and cultivate one-fifth of the area, allowance being made for any portion occupied by buildings; he cannot assign or sublet without permission. Notices must be posted on the land indicating that it is auriferous, and miners have free access to any part of the land without making compensation to the licensee for surface or other drainage. If the land has been improved to the value of £1 an acre, and if, in the opinion of the Board, the occupation is *boná-fide*, the licensee may, with the consent of the Minister of Mines, surrender his annual license and obtain in lieu thereof a license for an agricultural or grazing allotment.

Holders of miners' rights under the Mines Acts 1890 and 1897 are entitled to occupy, for the purpose of residence or business, a maximum area of one acre, upon payment of a fee of £5 per annum. A habitable dwelling must be erected within four months.

Annual licenses to occupy for grazing purposes the surface of any auriferous lands, or of any waste lands of the Crown not required for other purposes, are issued up to a maximum of 1000 acres. The annual rent is fixed by appraisement of the land. The licensee may, with the written consent of the Minister of Mines, enclose the whole or any specified part of the holding with a fence, which may be removed by him at or before the expiration of his license, and which must be removed by him when so ordered by the Board. Persons holding miners' rights and business licenses have free access to such areas; the licensee is forbidden to ringbark the timber on the land, and he is subject to a penalty of £20 if he omits to place upon the outside of the corner posts of the fence (if any) enclosing the land such distinguishing mark as may be directed. Worked-out auriferous lands may be proclaimed and licensed for occupation for a period of not exceeding seven years to a depth of 50 feet from the surface, and at a rent of not less than one shilling an acre per annum.

(vii.) *Sales by Auction.* The lands comprised within the areas described in a schedule attached to the Land Act 1901 may be sold by auction in fee simple, not exceeding 100,000 acres in any one year, at an upset price of £1 an acre, or at a higher price if so determined by proclamation. Before any country lands can be sold a schedule thereof must be laid before both Houses of Parliament. The purchaser must pay the survey charge at the time of sale, together with a deposit of 12½ per cent. of the whole price; the residue is payable in forty equal half-yearly instalments, with interest at the rate of 4 per cent. per annum. On failure of the payment of any instalment with interest, the deposit and any instalments already paid are liable to forfeiture, and the contract becomes void. Isolated portions of Crown lands not exceeding fifty acres, or any portion not exceeding three acres required as a site for a church or for any charitable purpose, may also be sold by auction. There are stringent provisions and penalties against illegal agreements to prevent fair competition at auction sales.

(viii.) *Leases of Swamp or Reclaimed Lands.* Swamp or reclaimed lands comprise the areas known as the Condah, Koo-wee-rup, Moe, Panyabyr, and Mokoan swamps, and such other areas as may from time to time be drained or reclaimed, and proclaimed as swamp or reclaimed lands in the *Government Gazette.* The Governor-in-Council is empowered to cause any swamp lands to be drained and reclaimed by prison or other labour, and the Board and other persons authorised by them may enter upon any lands whatsoever for the purpose of making surveys and taking levels, and may also appropriate such parts of any lands as may be necessary for the construction of any canals or drainage works, provided that full satisfaction be made under the Lands Compensation Act 1890 to the owner or occupier of such lands for all damage sustained through the exercise of such powers.

These swamp or reclaimed lands are divided into allotments not exceeding 160 acres, and the value of each allotment is provisionally determined by a Land Classification Board; an allotment may be leased either for a term of twenty-one years, or under a perpetual lease, or under a conditional purchase lease, or may be disposed of by public auction. Every lease for twenty-one years, every perpetual lease, every conditional purchase lease, and every contract for sale for an allotment of swamp or reclaimed lands, must *inter alia* contain (*a*) a condition that the lessee or purchaser will keep open all canals, ditches and drainage works on the land and adjacent to the land; and also (*b*) a condition that the lessee or purchaser will make permanent improvements on the land to the extent of ten shillings an acre in each of the three first years, unless the Minister is of opinion that such expenditure would not be advantageous or profitable, in which case the condition may be omitted or modified. The rent payable by the perpetual lessee of any swamp or reclaimed land for the period ending on the 29th December, 1909 (see above Perpetual Leases), is at the rate of four per cent. per annum on the value of the land, as fixed by the surrendered license or lease. In the event of a conditional purchase lease being granted, the price to be paid will be that fixed by the surrendered license or lease, and may be divided into equal instalments extending over a period of not more than twenty years.

(ix.) *State Forests, Timber and Water Reserves Licenses.* Grazing licenses or licenses to cut timber are issued for lands situated within State forests and timber reserves, and residence licenses also are issued for State forest lands, on payment of an annual license fee, and upon such terms and conditions as are from time to time fixed by the Governor-in-Council. Where any person has occupied any portion of forest lands as his home or the home of his family for not less than five years, and has effected thereon improvements to the value of not less than £2 an acre, he may, provided that there are no mining or other valid objections, obtain a grant of such land by purchase at a price determined by appraisement. Every alienation or conveyance of lands comprised within water reserves is absolutely prohibited.

(x.) *Leases and Licenses for other than Pastoral or Agricultural Purposes.* Leases are granted of any Crown lands not exceeding (except in the case of leases for guano or other manure) three acres, for a term of not more than twenty-one years, and at an annual rent of not less than £5. These leases are granted for various purposes, such as— For obtaining guano, stone or earth; for sites of inns, stores, bridges, ferries, factories, quays, or landing places; for the working of mineral springs, and for the manufacture of salt. If the lessee fail to use the land *bonâ fide* for the purpose for which he leased it, the lease may be cancelled at any time. Leases are also granted to persons who are willing to construct canals, docks, roads or tramways. Annual licenses are issued for any of the purposes for which leases are granted as above, and if the licensee has been in possession for five years and has constructed improvements on the land, he may purchase the allotment at an appraised price, provided that there are no objections to the alienation of the land on the ground of being auriferous or other reasons of a public nature.

Any unalienated Crown lands may be proclaimed as available for being licensed for the purpose of being used for bee range areas. Annual licenses are granted of areas, to be used as bee range areas, at a rent of not less than one half-penny for every acre within one mile of the site of the apiary as specified in the license. Any applicant may also obtain a license for the purpose of a bee farm not exceeding ten acres in extent upon any Crown lands or upon any lands held under a pastoral or grazing lease or under an annual grazing license. No person may hold more than three bee-farm licenses, and no holder of a grazing area or pastoral lease or of a grazing license may keep more than ten hives of bees on his holding, unless he is also the holder of a bee-farm license. The annual fee for such license is fixed by the Minister.

6. **Mallee Lands.**—The territory known generally as the "Mallee"—so named from the scrub with which the country, in its virgin state, was covered—comprises an area of about 11,000,000 acres in the north-western district of the State, and of this area more than half is unalienated and available for occupation. The soil is mostly of a light chocolate and sandy loam character, covered with scrub, interspersed with plains lightly timbered with box, she-oak and pines. The scrub can be cleared at a moderate expenditure, and the extension of railway facilities and of successful systems of irrigation, should bring large districts in this country into prominence as a field for agricultural enterprise.

(i.) *Administration and Modes of Tenure.* Land in the mallee is divided into four classes, and for the purposes of classification the Mallee Classification Boards are constituted. Until the year 1901, when the present Land Act was passed, mallee lands could be alienated under lease either as "Mallee Blocks" or "Mallee Allotments." The former were of various sizes; the term was for a period of twenty years and the rent was computed according to the stock-carrying capacity of the run. The Crown retained the right of resuming the land after giving notice, compensation for improvements effected being given upon assessment. "Mallee Allotments" could be leased up to a maximum area of 20,000 acres. The rent was fixed at one penny per acre per annum, and conditions either as to residence or as to the cultivation of a certain proportion of the allotment were imposed. It is now provided that all mallee lands after forfeiture or resumption, or on the expiration of any lease of a mallee block or a mallee allotment, shall be available for selection and shall not be again leased as a mallee block or allotment. Lands in the mallee country may be acquired either by agricultural licenses, or by perpetual lease.

(ii.) *Agricultural Licenses.* Any person over the age of eighteen years may select 640 acres of first-class, 1000 acres of second-class, 1280 acres of third-class, or 1600 acres of fourth-class land out of any area available for selection, either under a residential or non-residential license. Selections must form one continuous area separated only by roads. The purchase price of land made available for selection is fixed at £1 an acre for first-class, fifteen shillings an acre for second-class, ten shillings an acre for third-class, and five shillings an acre for fourth-class land.

In the case of residential licenses the selector may pay the purchase money either (a) under a license for six years at a fee of one shilling an acre per annum, and thereafter under a lease at a rent of one shilling an acre per annum for fourteen years, or (b) under a license for six years at a fee of sixpence an acre per annum, and thereafter under a lease at an annual rent of sixpence an acre for thirty-four years; the improvements at the expiration of the license must be to the value of not less than £1 an acre. For second, third, or fourth-class land the amounts which must be paid are three-fourths, one-half, and one-quarter of the above rates respectively, and improvements must be effected to the value of fifteen shillings, ten shillings, or five shillings an acre in each class respectively.

In the case of non-residential licenses the amount of the license is one shilling, ninepence, sixpence, or threepence an acre per annum, according to whether the land is in the first, second, third, or fourth class respectively. The term of the license is for six years, and on the expiration of this period, if all conditions have been complied with, the selector may obtain a lease for fourteen years at an annual rental of one shilling, ninepence, sixpence, or threepence an acre, according to the class of the land. Permanent improvements must be effected in respect of each acre to the value of six shillings and eightpence in each year of the first six years for first-class land, and to the value of five shillings, three shillings and fourpence, or one shilling and eightpence in each year of the first three years, for second, third, or fourth-class land respectively.

At the expiration of the license, or on obtaining a lease, if all conditions have been complied with, the selector is entitled to a grant upon payment of the difference between the amount of rent actually paid and the entire sum of £1, fifteen shillings, ten shillings, or five shillings, as the case may be, for each acre of first, second, third, or fourth-class land respectively.

(iii.) *Perpetual Leases.* Perpetual leases of mallee land are granted to all persons who are qualified to hold agricultural licenses, and the maximum area in each class respectively which may be held under such a lease is the same as in the case of an agricultural license. The rent for the period of ten years from the 1st December, 1903, and for every successive period of ten years, is determined by the Board at 1½ per cent. on the estimated unimproved value of the land, and is payable annually in advance. The lessee must destroy all vermin within two years, fence the land within six years, take up his residence on the land within six months after the grant of the lease, and continue to reside on the land or within five miles thereof for at least six months during the first year of his lease, and for at least eight months during each of the four following years. If, however, at least one-fourth of the allotment be cultivated within the first four years, and at least one-half before the end of the sixth year, the condition as to residence will not be enforced. The lessee must not cut or remove any live pine, box, or gum trees, and must protect all belts or clumps of such trees from fire. The Crown reserves the right to resume at any time any part of the land leased for public or mining purposes, subject to payment to the lessee of the actual cost of removing his improvements or the amount of loss sustained in consequence of relinquishing improvements not removable. Any lessee of a perpetual lease, whose rent is not in arrear, may surrender his lease by making written application to the Board within six months after the 29th December, 1919, or within six months after any successive period of ten years, and if the Board is satisfied that the applicant holds the allotment *bonâ fide* for his sole use and benefit, he may obtain an agricultural license, either residential or non-residential.

(iv.) *Vermin Districts.* Any land in the mallee country or border may be proclaimed as a "vermin district," and for the purpose of procuring the extinction of the vermin local committees of five persons are constituted, the members of which are elected by the owners and lessees of the lands within the district. This committee is empowered to levy an annual rate, assessed in respect of each square mile of land or in respect of the number of sheep or cattle depastured thereon, and are also entitled to levy an annual rate called the "fence rate," for the purpose of erecting and repairing vermin-proof fences. The local committee may serve the owner or occupier of any lands within the district with a notice calling upon him to destroy all vermin upon his land, and upon failure to comply with this notice the committee may take steps to secure the destruction of the vermin.

7. **Village Communities.**—Any unalienated Crown lands, provided they are not auriferous or are not permanently reserved for any purpose, may be proclaimed and appropriated for the purposes of village communities. Such lands are surveyed into allotments of from one to twenty acres, according to the quality of the soil and the situation of the land, and the price of each allotment cannot be less than twenty shillings an acre. Permits to occupy these allotments are granted to approved persons for periods not exceeding three years, at a nominal rent fixed by the Board. An applicant must not be under the age of eighteen years, nor the owner of the fee simple of two acres or over, nor the lessee of a pastoral allotment, grazing area, or homestead section, nor the holder of an agricultural allotment license. Any permissive occupant of an allotment can obtain monetary assistance not exceeding £50 from the Board, for the purpose of erecting buildings and improvements. Such loan is repayable in twenty equal annual instalments. On the expiration of the period for which the permit was granted a lease may be obtained, provided that the conditions of occupancy have been fulfilled. The lessee must pay in advance the annual rent reserved, in forty equal half-yearly instalments, and must also pay within five years the cost of survey in ten equal half-yearly instalments in advance. Within two years from the date of his lease he must bring into cultivation not less than one-tenth of the land demised; within four years he must bring into cultivation not less than one-fifth, and within six years he must erect permanent improvements to the value of £1 for each acre. The lessee cannot assign, transfer, or sublet or borrow money on the security of the land without the written consent of the Board; he must reside on the land and use it for agriculture, gardening, grazing, dairy-farming, or other like purpose. The Crown reserves the right to resume any of the land for public or mining purposes on return of the amount of rent paid and on payment for permanent improvements. Any person in occupation of an allotment under permit or lease may surrender the same and acquire the land under a perpetual lease or a conditional purchase lease.

8. **Homestead Associations.**—Any block of unalienated Crown lands, not exceeding 2000 acres in area, may be proclaimed and appropriated for occupation by members of associations or societies, but no proclamation may remain in force for longer than three years in the case of a society, nor for more than six months in the case of an association, after in each case the survey and subdivision of the block, at the expiration of which periods the land, if not leased, becomes unoccupied Crown land again. A block of land is surveyed and subdivided into sections not exceeding fifty acres each, and the number of persons to be located in each block must not be less than one person to each fifty acres. A section may be taken up by any member of the association or society who is over eighteen years of age, provided that he is not owner in fee simple of ten acres of land or over, nor is the lessee of a pastoral allotment or grazing area, nor a licensee of an agricultural or village allotment. The secretary of the association or society must register with the Board the name, address, and description of each member, and must pay a registering fee of two shillings and sixpence for each settler. The permit to occupy a section may not exceed three years, and is at a nominal rent fixed by the Board. On expiration of the period for which the permit is granted, and on compliance with all the conditions of occupancy, a lease will be issued for twenty years. Any permissive occupant may obtain a loan from the Board for the purpose of erecting buildings or improvements up to the sum of £50, repayable in twenty equal annual instalments, provided that the occupant also expends on buildings and improvements a sum equal pound for pound to the sum advanced. The lessee covenants to pay the annual rent and survey fee, and to repay all moneys advanced by the Board. The conditions as to cultivation, improvements, and alienation by the lessee are the same as in the case of village allotments. Adjoining or within every block appropriated for the purposes of a homestead association, an area of not more than 100 acres may be set apart as the site for a township, and out of this area not more than forty acres may be reserved, either temporarily or permanently as a recreation ground. The Board may divide either the whole or any part of the land so set apart into as many township allotments, not exceeding one acre each, as may be necessary to provide one township allotment for each homestead section in the adjoining block. Any settler may, within one year from the

commencement of his permit or lease, obtain a lease to such a township allotment, which will thereupon become appurtenant to the settler's homestead section.

9. **Labour Colonies.**—Areas of land, not being auriferous or not permanently reserved for any purpose, may also be set apart, up to a maximum area of 1500 acres, for the purpose of labour colonies, to be vested in five trustees appointed by the Governor. Persons subscribing to the funds of a labour colony may elect a committee of management, composed of four persons, to assist the trustees in the management of the colony. The trustees and committee may admit to such a colony any person entitled to such benefits as the rules of the colony may prescribe; they may establish and maintain any desired industry, and have full powers and authority to enable them to manage the colony, improve its position, and to make it self-supporting. A subsidy of £2 for every £1 received by the trustees or committee from public and private subscriptions is paid annually by the Government. All moneys received by the trustees or committee are to be paid into a trust account, and may be expended either in payment of allowances for work to persons employed in the colony, in the erection of necessary buildings, and in purchasing provisions, clothing, building materials, stock, seed, and all things necessary for the proper working of the colony.

10. **Closer Settlement.**—The regulations under which land is acquired by the Crown, and is alienated by lease for the purposes of closer settlement, are based upon the Closer Settlement Act of 1904, as amended in 1906.

(i.) *Administration.* For the purpose of carrying out the provisions of these Acts, a Lands Purchase and Management Board consisting of three members is constituted, and this Board is empowered to take for the Crown either by agreement or compulsorily, blocks of private land in any part of the State. All land so acquired is to be paid for in money, the proceeds of the sale of stock and debentures under the Act, or at the option of the owner and if the Treasurer consents with Victorian Government debentures or stock, bearing interest at such a rate as the Governor may determine. The Governor is authorised from time to time during the first five years from the date on which the Act came into force, to increase the amount of Victorian Government stock by an amount not exceeding £500,000 in any one year, or he may issue debentures for the whole or any part of such sum in lieu of increasing the amount of stock. The proceeds of the sale of such stock or debentures are only to be applied for the purposes of the Act. In case of the compulsory acquisition of land, the Lands Compensation Act of 1890 is incorporated, and a Compensation Court is provided for.

(ii.) *Division of Land into Allotments.* The Board may dispose of all land acquired on conditional purchase leases either as farm allotments, workmen's homes allotments, or agricultural labourers' allotments. The price of the land disposed of is to be so fixed as to cover the cost of original purchase, the cost of survey and subdivision, the value of lands absorbed by roads and reserves, and the cost of clearing, draining, fencing, or of other improvements which the Board may effect prior to the disposal of the land. The land to be disposed of is divided into (*a*) farm allotments not exceeding £1500 in value, (*b*) workmen's homes allotments not exceeding £100 in value. and (*c*) agricultural labourers' allotments not exceeding £200 in value.

(iii.) *Terms, Conditions, and Covenants of Leases.* An application for a lease must be accompanied by a deposit equal to one instalment of the purchase money of the allotment of the highest value of those applied for, and the registration and lease fees thereof. Not more than one allotment may be held by one lessee. Every conditional purchase lease is for such a term of years as may be agreed upon by the lessee and the Board, and payment must be made with interest at 4½ per cent. per annum by seventy-three half-yearly instalments, or such lesser number as may be agreed upon. The lease is subject to the following conditions:—The lessee must destroy vermin and noxious weeds to the satisfaction of the Board within three years; he must enclose the land within the same time; he must personally reside during eight months in each year, during the currency of the lease, on his allotment; he must make improvements equivalent in value to at least two instalments payable for the land before the end of the first year; to the value of 10 per cent. of the purchase money before the end of the third year, and to the value of a further 10 per cent. before the end of the sixth year. If all covenants and conditions have been duly complied with the lessee may, after six years, and with the written consent of the Board, transfer, assign, mortgage, or sublet his allotment. A Crown grant may be issued after the expiration of twelve years on payment of the balance of the purchase money, if all conditions have been complied with. Any land may be resumed by the Crown for public purposes upon payment of compensation to the lessee for the loss of his allotment and of any improvements erected by him thereon. In the case of workmen's homes allotments the land must be fenced within one year, and a dwelling-house to the value of at least £50 must be erected within the same time; within two years improvements must be made to the value of at least £25. As regards agricultural labourers' allotments, a dwelling-house to the value of at least £30 must be erected within one year, and in two years the allotment must be fenced.

(iv.) *Advances to Settlers.* The Board may make advances not exceeding £50 in any one case for the purpose of fencing and building dwelling-houses. The Board is also empowered to erect dwelling-houses, outbuildings, or improvements on any allotment at a cost not exceeding £250 for any one allotment, and any sum so expended, together with interest at 5 per cent. per annum, is repayable by equal half-yearly, quarterly, or monthly instalments, extending over such a period not greater than twenty years as may be prescribed. Land acquired by the Board may also be sold in small areas in fee simple as sites for churches, public halls, butter factories, creameries, or recreation reserves.

11. **The Small Improved Holdings Act, 1906.**—The object of this Act is to assist deserving persons to acquire small improved holdings in rural districts as close as possible to centres of population, where industrial employment may be obtained. The Governor is authorised to set apart any unoccupied Crown lands, or any land acquired under the Closer Settlements Acts, for the purpose of small improved holdings, and is empowered during the first three years in which the Act is in force to raise money, by the issue of Victorian Government stock, to the extent of not more than £150,000 in any one financial year, for the purpose of acquiring private land adapted for small holdings. All lands so set apart are divided into holdings not exceeding £200 in value, and the Minister may direct that the land be adapted for any purposes of husbandry by erecting improvements to the value of not more than £150 on any one allotment, which sum is paid out of a fund created for the purpose.

(i.) *Permissive Occupancy.* Any person who is over twenty-one years of age, is of good repute, and is unable by his personal means to acquire land suited to his requirements, may become a probationary tenant of a holding by making application to the Minister, who will grant a permissive occupancy. The occupant must, if required, enter into employment under the direction of a foreman, upon improvement works on his allotment. In case of such employment being required the occupant will be paid twenty shillings per week during the first six months, fifteen shillings a week during the second six months, and ten shillings a week during the third six months of such employment.

(ii.) *Leases of Holdings.* At the expiration of six, twelve, or eighteen months from the time when permissive occupancy was granted, the tenant may obtain a conditional purchase lease, on payment of the registration and lease fees, for a term of 31½ years. The lessee must pay the value of the allotment and of any improvements effected out of the fund referred to above. He must destroy vermin and noxious weeds, and must within one year from the date of issue of the lease enclose his holding with a fence. Either the lessee or an approved member of his family must, during the currency of the lease, reside personally for at least eight months in each year on the allotment; he must insure buildings and improvements against fire, and he may not transfer, assign, mortgage, or sublet his holding during the first six years of the lease. If at any time after the expiration of twelve years of the lease the Minister is satisfied that all conditions have been complied with, and that the full purchase money has been paid, a Crown grant may be issued to the lessee.

12. **Areas Alienated and in Process of Alienation, and Area of Occupied and Unoccupied Crown Lands, 1901 to 1906.**—The total area of the State of Victoria is 56,245,760 acres, of which 22,964,929 acres had been alienated absolutely up to the end of the year 1906, while 3,871,200 acres were in process of alienation under deferred payments, the remainder consisting of reserves, roads, and other unalienated Crown lands. The following table shews the areas alienated and in process of alienation, together with the areas reserved, leased, and available for occupation at the end of each year from 1901 to 1906 inclusive:—

VICTORIA. — PARTICULARS OF AREAS ALIENATED, IN PROCESS OF ALIENATION, AND OF UNALIENATED CROWN LANDS ON THE 31ST DECEMBER, 1901 TO 1906, INCLUSIVE.

Particulars.	Area in Acres.					
	1901.	1902.	1903.	1904.	1905.	1906.
1. *Area Alienated*—						
In Fee Simple (exclusive of Mildura)	20,033,023	20,556,759	21,066,839	21,650,849	22,558,188	22,902,707
„ „ at Mildura	62,222	62,222	62,222	62,222	62,222	62,222
2. *In Process of Alienation*—						
Exclusive of Mildura and the Mallee	3,399,890	3,135,600	3,050,179	2,681,091	1,948,633	1,734,876
At Mildura	187,778	187,778	187,778	187,778	187,778	187,778
Mallee Lands	87,606	115,822	159,237	1,215,372	1,589,961	1,948,460
3. *Crown Lands*—						
Roads	1,571,182	1,587,289	1,614,773	1,623,139	1,634,449	1,643,436
Water Reserves	291,718	291,254	292,910	292,055	290,120	289,908
Reserves for Agricul. Colleges, etc....	155,483	155,483	155,483	155,483	155,483	155,483
State Forests	4,273,910	4,341,248	4,327,142	4,328,693	4,330,383	4,329,417
Timber Reserves	344,345	338,292	332,133	335,180	328,438	326,082
Permanently Reserved for Public Purposes	1,592,400	1,592,400	1,592,400	1,592,400	1,592,400	1,592,400
Other Reserves	197,900	197,750	197,750	200,280	200,065	203,136
Reserves in the Mallee	397,881	397,881	397,881	397,881	397,881	397,881
Unsold Land in Towns, etc. ...	233,067	2,476,682	2,834,017	1,871,721	1,980,457	1,795,641
Land in Occupation under—						
Perpetual Leases...	8,137	11,475	11,766	15,637	28,944	29,267
Pastoral Leases	39,450	52,150	52,150	52,150	52,150	64,150
Grazing Area Leases	2,338,649	2,846,052	3,420,534	3,528,986	3,631,974	3,533,792
Swamp Leases	4,200	3,901	4,090	4,030	4,369	4,450
Grazing Licenses (auriferous) ...	377,427	363,269	378,653	400,592	—	—
Settlement on Lands Act 1893 ...	55,077	52,613	51,532	56,626	55,395	54,404
Mallee Pastoral Leases	7,980,592	7,746,433	2,631,449	2,274,117	1,984,246	1,731,217
Perpetual Leases, Mallee Lands Act 1896	448,842	510,709	543,927	417,146	431,214	501,013
Available for Occupation on 31st December	12,164,981	9,222,698	12,880,915	12,992,132	12,850,990	12,758,040

Total area of State, 56,245,760 acres.

Corresponding figures for previous years may be obtained from the Statistical Registers of Victoria.

13. **Areas Available for Occupation, 1901 to 1906.**—The following statement gives a description of the lands comprised in the areas available for occupation at the end of each year since the year 1901:—

VICTORIA.—DESCRIPTION OF LANDS AVAILABLE FOR OCCUPATION ON THE 31ST DECEMBER, 1901 to 1906, INCLUSIVE.

Class.	Description of Land.	Area in Acres.					
		1901.	1902.	1903.	1904.	1905.	1906.
1.	Good Agricultural and Grazing Land	254,626	50,000	17,021	13,828	17,055	17,746
2.	Agricultural and Grazing Land	383,976	140,000	112,456	106,460	110,700	116,258
3.	Grazing Land	3,346,204	1,860,000	1,925,956	1,819,555	1,858,945	1,948,533
4.	Inferior Grazing Land... ...	81,221	73,000	77,145	72,877	72,877	—
5.	Pastoral Land (large areas) ...	4,550,322	3,544,700	3,513,446	3,354,465	3 355,020	3,348,754
6.	Swamp or Reclaimed Land ...	78,311	20,510	12,772	1,555	2,487	3,292
7.	Lands that may be sold by auction (excluding Swamp or Reclaimed Land)	17,882	12,474	5,577	19,662	18,616	18,245
8.	Auriferous Land	949,647	1,017,800	938,236	889,968	841,290	808,212
	Mallee Lands	2,502,792	2,504,214	6,278,306	6,623,762	6,574,000	6,497,00
	Total	12,164,981	9,222,608	12,880,915	12,902,132	12,850,990	12,758,040

Corresponding figures for previous years may be obtained from the Statistical Registers of Victoria.

14. **Area Occupied for Pastoral Purposes, 1901 to 1906.**—The following statement shews the areas of Crown lands occupied for pastoral purposes under leases and licenses at the end of each year, from 1901 to 1906 inclusive:—

VICTORIA.—OCCUPATION OF CROWN LANDS UNDER LEASE OR LICENSE FOR PASTORAL PURPOSES, ON THE 31ST DECEMBER, 1901 TO 1906.

Tenure.	Area in Acres.					
	1901.	1902.	1903.	1904.	1905.	1906.
Pastoral Lease	39,450	52,150	52,150	52,150	52,150	64,150
Grazing Area Lease ...	2,338,649	2,846,052	3,420,534	3,528,986	3,631,974	3,533,792
Grazing Licenses—						
Under Land Acts 1890 and 1891	5,908,985	5,657,676	2,422,271	—	—	—
Under Land Acts 1891 (exclusive of Mallee) ...	—	—	—	6,998,278	7,481,535	5,820,997
Under Land Acts 1901, Mallee Lands	—	—	—	—	4,272,652	4,897,943
Auriferous Lands—						
Under Land Act 1890 ...	377,427	363,269	378,653	—	—	—
" " " 1901 ...	—	—	—	400,592	99,774	101,163
Swamp Lands	4,200	3,901	4,090	4,030	4,369	4,450
Perpetual Leases	8,137	11,475	11,766	15,637	28,944	29,267
Mallee Pastoral Leases ...	7,980,592	7,746,433	—	—	—	—
Mallee Allotment Leases ...	—	—	2,631,459	2,274,317	1,984,246	1,731,217
Perpetual Leases under Mallee Lands Act 1896 ...	448,842	510,709	543,927	417,146	431,214	501,013
Wattles Act 1890	4,427	4,427	4,427	1,980	1,980	—
Total	17,110,709	17,196,092	9,469,277	13,693,116	17,938,838	16,683,99

Corresponding figures for previous years may be obtained from the Statistical Registers of Victoria.

15. **Classification of Holdings according to Area.**—The following table shews the number and area of holdings of lands alienated absolutely and in process of alienation, together with the area of Crown land held under lease or license in conjunction therewith, during the year ended 1st March, 1906:—

VICTORIA.—CLASSIFICATION ACCORDING TO SIZE OF HOLDINGS ALIENATED ABSOLUTELY AND IN PROCESS OF ALIENATION ON THE 1ST MARCH, 1906.

Lands Alienated and in Process of Alienation.			Extent of Crown Land Held in Conjunction with Holdings.	Extent of Land under Cultivation.
Size of Holdings.	Number of Holdings.	Extent of Land Occupied.		
Acres.		Acres.	Acres.	Acres.
1 to 5	2,465	7,655	21,759	3,360
6 ,, 15	3,486	35,597	21,056	14,466
16 ,, 30	4,012	89,213	110,744	31,336
31 ,, 50	3,346	137,561	131,585	38,589
51 ,, 100	5,864	451,643	269,615	108,829
101 ,, 200	7,998	1,206,509	488,166	256,524
201 ,, 320	8,123	2,252,782	449,561	532,806
321 ,, 500	5,507	2,247,258	1,123,555	531,509
501 ,, 640	3,812	2,250,073	480,725	666,027
641 ,, 1,000	3,876	3,164,404	1,063,166	735,263
1,001 ,, 2,500	3,466	5,112,200	2,200,867	1,009,034
2,501 ,, 5,000	617	2,106,732	1,996,797	180,884
5,001 ,, 10,000	220	1,567,251	471,271	44,347
10,001 ,, 20,000	116	1,652,910	149,879	21,265
20,001 ,, 50,000	73	2,114,391	26,460	20,455
50,001 and upwards	6	366,766	577	1,801
Total	52,987	24,762,945	9,005,783	4,196,495

In the above table the Crown land is not classified according to area, but is simply the total Crown land held in conjunction with each group of holdings. In addition to the areas of Crown land specified above, there are 749,798 acres held under various forms of leases and licenses. Particulars as to the number and size of the holdings are given in the subjoined table :—

VICTORIA. — CLASSIFICATION ACCORDING TO SIZE OF HOLDINGS OF CROWN LANDS UNDER LEASE OR LICENSE ON THE 1ST MARCH, 1906 (EXCLUDING LAND HELD UNDER LEASE OR LICENSE IN CONJUNCTION WITH HOLDINGS OF LANDS ALIENATED ABSOLUTELY, OR IN PROCESS OF ALIENATION).

Size of Holdings.	Number of Holdings.	Extent of Land Held.	Extent of Land under Cultivation.
Acres.		Acres.	Acres.
1 to 5	331	710	264
6 ,, 15	86	845	305
16 ,, 30	119	2,479	295
31 ,, 50	57	2,398	257
51 ,, 100	53	4,024	265
101 ,, 200	108	17,041	1,057
201 ,, 320	122	34,910	4,078
321 ,, 500	80	34,096	5,970
501 ,, 640	91	54,732	16,070
641 ,, 1,000	115	96,888	12,078
1,001 ,, 2,500	105	157,017	22,339
2,501 ,, 5,000	14	51,679	4,117
5,001 ,, 10,000	2	15,005	—
10,001 ,, 20,000	1	19,014	7
20,001 ,, 50,000	2	50,400	—
50,001 and upwards...	2	208,560	6,280
Total	1,288	749,798	73,382

16. **Areas acquired and made available for Closer Settlement, 1901-1906.**—The following statement shews the operations which have taken place in Victoria under the provisions of the Closer Settlement Acts, 1898 to 1906, up to the 30th June in each year from 1901 to 1907 inclusive :—

VICTORIA.—PARTICULARS OF OPERATIONS UNDER THE CLOSER SETTLEMENT ACTS FOR EACH YEAR FROM 1901 to 1907.

Year ended 30th June.	Total Area Acquired by Government to Date.	Total Cost to Date.	How Made Available for Settlement.					Number of Applications Granted to Date.	Total Receipts to Date.	Repayments of Principal to Date.	Area Available for Settlement.
			Farm Allotments.	Workmen's Homes Allotments.	Agricultural Labourers' Allotments.	Town Allotments.	Roads and Reserves.				
	Acres.	£	Acres.	Acres.	Acres.	Acres.	Acres.	No.	£	£	Acres
1901	28,553	151,566	28,461	69	—	44	240	193	7,529	—	—
1902	33,655	205,715	33,477	69	—	48	329	239	21,181	5,002	—
1903	33,662	206,285	33,483	69	—	48	329	239	28,846	6,921	—
1904	33,662	209,341	33,483	69	—	48	329	239	42,128	16,625	—
1905	36,516	228,982	35,513	152	366	48	335	336	56,549	18,110	19
1906	148,902	1,008,839	116,371	186	924	232	775	933	92,638	28,869	2,790
1907	207,775	1,349,661	156,358	428½	1,108	308½	827½	1,212	163,203	60,224	2,429

§ 4. Queensland.

1. **Settlement in Early Days.**—Previous to the year 1859 the Moreton Bay district, as it was then called, formed a portion of New South Wales. The early history of its methods of land settlement is thus included in that of the mother colony. With separation from New South Wales, and the election of a Legislative Assembly of its own, the district of Moreton Bay—or, as it was henceforth to be known. the Colony of Queensland—entered on a new era of prosperity.

2. **History of Land Legislation.**—The early land legislation of the new State followed the lines adopted by the mother colony in introducing sales under the deferred payment system, and the principle of free selection before survey. The vast area of the State, 670,500 square miles, permitted of greater liberality in the disposal of land than was shown to settlers in the mother State, and generous provisions were made to facilitate the exploration and occupation for pastoral purposes of the interior country under the Crown Lands Occupation Act of 1860 and the Pastoral Leases Act 1863 to 1869, the result being that the resources of the State were rapidly developed and the population greatly increased. Under pressure of the new social movement, great facilities have been given to the working classes to enable them to acquire possession of the soil. In the year 1884 the Crown Lands Act was passed consolidating and amending all previous measures, and this Act was in turn amended in 1886, 1889, 1891 and 1893. Under the provisions of the Agricultural Lands Purchase Act 1894 to 1905, power was given to the Government to repurchase lands for the purpose of closer settlement; these Acts have now been consolidated and repealed by the Closer Settlement Act of 1906. The Pastoral Leases Act of 1869 was amended in 1890 and 1900, but these Acts are now inoperative as to future leases. Lessees under these Acts may surrender their leases, which are thereupon divided into two parts, for one of which—called the resumed part—the lessee may obtain a right of depasturing, and for the other, a lease for a term up to forty-two years.

3. **Land Acts now in Force.**—In 1897 a Bill dealing with the occupation, alienation and management of Crown Lands was introduced and carried through Parliament. This was the Land Act 1897, which came into operation on the 1st March, 1898, and which, as amended in 1902 and 1905, is at present in force. In 1901 the Pastoral Holdings New Leases Act was passed. Repurchased lands are now dealt with under the provisions of the Agricultural Lands Purchase Act 1894, as amended in 1897, 1901, and 1905.

4. **Administration under the Land Acts.**—A Land Court, consisting of three persons, is constituted to deal with a variety of matters affecting the alienation of Crown lands. In certain cases appeal may be made from the decision of the Land Court to the Land Appeal Court, the decision of which is final except on points of law. The State is divided into Land Districts, in each of which there is a Public Lands Office under the management of a Land Agent, from whom plans and information as to the quality, rent, and price of land available for selection in each particular district may be obtained, and with whom applications must be lodged. Full information respecting lands available throughout the State or on any matter connected with the selection of holdings, may be obtained on application to the Inquiry Office, Department of Public Lands, Brisbane.

5. **Modes of Tenure.**—The several types of selections which may be acquired are as follows:—Agricultural farms, agricultural homesteads, grazing farms, grazing homesteads, unconditional selections, scrub selections, prickly pear selections, and sales by auction.

(i.) *General Provisions.* Land is made available for selection by proclamation in the *Gazette*, specifying the modes in which the land may be selected, the area, rent, price and conditions. Any person of either sex over the age of sixteen years, who does not seek to acquire the land merely as the agent or servant of another, is allowed to select; but a single girl under the age of twenty-one is debarred from selecting an agricultural or grazing homestead, as also is a married woman, unless she is judicially separated, or possesses separate estate, or is living apart from her husband and has been specially empowered by the Land Court to select a homestead. A married woman may, however, acquire a grazing homestead by transfer after the expiration of five years of the term of the lease. An alien may, under certain circumstances, acquire a selection, but must become a naturalised British subject within three years.

(ii.) *The Special Agricultural Selections Act 1901.* Under the Special Agricultural Selections Act 1901, as amended in 1904, land may be set apart as homesteads, farms, or prickly pear selections, for any body of settlers, who, having some measure of common interest or capacity for mutual help, are desirous of acquiring land in the same locality. The procedure to be followed is for a request to be made to the Minister by the members of the body, explaining the grounds on which they are co-operating, and setting out the land they desire to acquire. Should the request be acceded to, the land will be opened for selection in the usual way, but for a period to be stated in the proclamation, it will only be available for the members of the body of settlers for whom it has been set apart. By the Lands Act Amendment Act 1905 a new departure has been made in providing that lands may be set apart for exclusive selection in Great Britain. Application to select such lands should be made at the office of the Agent-General, and selectors of such lands will have credited towards the purchasing price the money paid for the passages of themselves and families to Queensland, not exceeding, however, £17 per "statute adult," *i.e.*, per person eligible as a selector (Sec. 5 (i.) hereinbefore).

(iii.) *Applications for Selections.* Applications for selections must be made in the prescribed form, in triplicate, and be lodged with the land agent for the district in which the land is situated, and must be accompanied by a deposit of a year's rent, and one-fifth of the survey fee. The remainder of the survey fee is paid in four equal annual instalments. If land is open for selection in two or more modes alternatively, and there are simultaneous applications to select it under different modes, priority among such applications is given to an application for the land as an agricultural homestead, as against an application for it as an agricultural farm: to an application for it as an agricultural farm as against an application for it as an unconditional selection; and to an application for it as a grazing homestead, as against an application for it as a grazing farm. In the case of simultaneous applications for the same land as an agricultural farm, priority is secured by an applicant other than a married woman or a single girl under twenty-one years of age, who, when making application, undertakes to personally reside on the land during the first five years of the lease. When an application has been accepted by the

Land Commissioner and approved by the Land Court, and the applicant has paid for any improvements there may be on the land, he becomes entitled to receive a license to occupy the land in the case of an agricultural selection or a grazing selection, or a lease in the case of a scrub selection, unconditional selection, or prickly pear selection. Within six months after the issue of a license, the selector must commence to occupy the land, and thereafter continue to occupy it in the manner prescribed. Selectors may, under certain conditions, by application to the Under Secretary for Public Lands, obtain concessions in respect of the carriage by rail to the railway station nearest to his selection of himself, his family and his effects, and in respect of the carriage of any such material intended for use in improving the selection.

(iv.) *Agricultural Farms.* The more accessible lands near lines of railway, centres of population, and navigable waters are usually set apart for agricultural selection up to the maximum area of 1280 acres allowed to each selector of an agricultural farm. If the same person be the selector of both an agricultural farm and an agricultural homestead, the joint areas must not exceed 1280 acres. The term is twenty years and the price ranges from ten shillings per acre upwards, as may be fixed by the proclamation. The annual rent is one-fortieth of the purchasing price, and the payments are credited as part of the price. The selector must occupy the land continuously, either in person or by agent, for the whole term of the lease. The cost of survey, ranging from about £10 to £12 for a farm of 160 acres to about £20 to £40 for a farm of 1280 acres, must be borne by the selector.

Within five years from the issue of the license to occupy, the selector must enclose his land with a substantial fence, or make permanent improvements of equivalent value. On the completion of the improvements the selector becomes entitled to a lease of the farm, and may thereafter mortgage it; or, with the permission of the Minister, may subdivide or transfer it; or, with the approval of the Court, may sublet it. After five years of the term have elapsed, the prescribed conditions of occupation and improvement having been duly performed, a deed of grant may be obtained on payment of the balance of the purchase money.

(v.) *Agricultural Homesteads.* When land is taken up as an agricultural homestead, the maximum area is restricted to 160 acres, 320 acres, or 640 acres, according as the price specified in the proclamation is determined at not less than twenty shillings; less than twenty shillings but not less than fifteen shillings; or less than fifteen shillings per acre respectively. The price for a homestead is two shillings and sixpence an acre, the annual rent threepence an acre, and the term ten years. The selector must himself reside continuously on the land, and within five years from the issue of the license to occupy, must also fence the land, or must make permanent improvements of equivalent value. On the completion of the improvements the selector is entitled to a lease.

At any time after five years from the commencement of the term, on the selector proving that the conditions have been performed and that the sum expended in improvements on the land has been at the rate of ten shillings, five shillings, or two shillings and sixpence an acre respectively according to the value of the land, he may pay up the remaining rent, so as to make his total payments equal to two shillings and sixpence an acre, and obtain a deed of grant of the land in fee simple. Under the amending Act of 1905 agricultural homesteads may, on certain conditions, be converted into agricultural farms.

(vi.) *Grazing Farms.* Areas of land already surveyed are available for selection as grazing farms over a great extent of territory within accessible distance of the sea-board. The greatest area which may be applied for under any circumstances is 60,000 acres, but each proclamation opening land for grazing selection declares the maximum area which may be selected in the area to which it applies. In the event of lands open under different proclamations, and of a total area exceeding 20,000 acres being applied for by the same person, a rental limitation of £200 per annum must be observed. Thus, of lands open at twopence per acre, the maximum area obtainable would be 24,000 acres; at three halfpence per acre, 32,000 acres, and so on. The term may be fourteen, twenty-one, or twenty-eight years, as the opening proclamation may declare. The annual rent for the first period of seven years may range from one halfpenny an acre upwards, as may be proclaimed or tendered. The rent for each subsequent period of seven years will be determined by the Land Court.

A grazing farm must be continuously occupied by the selector residing personally on it, or by his manager or agent doing so. Within three years of the issue of the license to occupy, the selector must enclose the land with a substantial fence, and must keep it so fenced during the whole of the term. In the case of two or more contiguous farms, not exceeding in the aggregate 20,000 acres, the Court may permit the selectors to fence only the outside boundaries of the whole area. If so declared by proclamation, the enclosing fence must be of such a character as to prevent the passage of rabbits.

The selectors of a group of two or more grazing farms, the area of none of which exceeds 4000 acres, may associate together for mutual assistance, and on making proof of *bona-fides* to the Commissioner, may receive from him a special license, enabling not less than one-half of the whole number by their personal residence on some one or more of the farms to perform the condition of occupation in respect of all the farms. The applicant for a grazing farm must first obtain an occupation license, and as soon as the land is fenced in the manner prescribed, the selector becomes entitled to a lease of it, and may thereafter mortgage it; or, with the permission of the Minister may subdivide or transfer it; or with the consent of the Land Court, may underlet it. The cost of survey—of which one fifth must be paid when application is made—ranges from about £30 for a farm of 2560 acres to about £65 for 20,000 acres.

(vii.) *Grazing Homesteads.* Lands available as grazing farms are also available for selection as grazing homesteads at the same rental and for the same term of lease. As already stated an application to select as a grazing homestead takes precedence of a simultaneous application to select the land as a grazing farm. The conditions and provisions stated above in respect of grazing farms are applicable also to grazing homesteads, with the following two exceptions:—(*a*) During the first five years of the term of a grazing homestead the condition of occupation must be performed by the continuous personal residence of the selector on the land. (*b*) Before the expiration of five years from the commencement of the term, or the death of the original lessee, whichever first happens, a grazing homestead is not capable of being mortgaged, assigned or transferred.

(viii.) *Unconditional Selections.* Areas of land are available for unconditional selection at a price ranging from thirteen shillings and fourpence upwards, which is payable in twenty annual instalments. The maximum area which can be acquired by any one person as an unconditional selection is 1280 acres. As the term implies, no other condition than the payment of the purchase-money is attached to this mode of selection; a negotiable lease for the term of twenty years is issued to the selector when his application to select has been approved by the Court, and a deed of grant may be obtained at any time on payment of the balance of the purchasing price.

(ix.) *Scrub Selections.* Lands which are entirely or extensively overgrown with scrub are available for selection in different classes according to the proportion of the land covered with scrub. The area selected must not exceed 10,000 acres, and the term of the lease is thirty years, the rent ranging from a peppercorn an acre in the first five years, one halfpenny an acre for the next succeeding ten years, and one penny an acre for the remaining fifteen years in respect of lands in the first class; to a peppercorn for the first twenty years, and one penny an acre for the remaining ten years in respect of those in the fourth class. During the first period in which the selector pays a peppercorn rent he must clear the whole of the scrub in equal proportions each year, and must keep it cleared, and must enclose the selection with a good and substantial fence. A negotiable lease is issued to the selector when his application is approved.

(x.) *Prickly Pear Selections.* Prickly pear infested selections comprise areas thickly covered with prickly pear. The area selected must not exceed 5000 acres. The term is thirteen years, with a peppercorn rental for the first ten years, and an annual rent of one-third of the purchasing price for the remaining three years. During the first ten years of the term the land must be absolutely cleared of prickly pear (one-tenth during each year), and must be kept clear for the remainder of the term. The freehold may be obtained prior to the expiry of the term on proof being made that the land has been maintained free from prickly pear for three years consequent on the eradication having been completed in advance of the prescribed period.

Prickly pear frontage selections are confined to prickly pear frontage areas, comprising lands free from or only lightly infested with prickly pear, but which adjoin and do not extend for more than seven miles from lands heavily infested. The greatest area allowed is 5000 acres. The term is eight years, with a peppercorn rental during the first five years, and an annual rent of one-third of the purchasing price during the remaining three years. During the first five years the land must be absolutely cleared of prickly pear (one-fifth each year), and must be kept clear during the balance of the term. The freehold may be obtained prior to the expiry of the term upon proof being made that the land has been maintained free from prickly pear for three years consequent on the eradication having been completed in advance of the prescribed period.

In the case of prickly pear (bonus) selections, the freehold of the land, and a bonus in addition, are granted in return for the complete eradication of the pear. The maximum amount payable as bonus is stated in the opening proclamation, but each applicant must lodge a tender specifying a bonus per acre not in excess of that mentioned in the proclamation. The size of the portions opened out must not exceed 2560 acres. The term of the lease is ten years, at a peppercorn rental throughout. The land must be absolutely cleared of prickly pear during the first seven years (one-seventh each year), and the land must be maintained clear till the end of the lease. One-seventh of the bonus payable may be claimed at the end of each of the first seven years of the term on proof to the satisfaction of the Commissioner that the condition of eradication has been complied with. If the eradication be completed at an earlier date than is required by the condition of the lease, the balance of the bonus will then become payable. The freehold may be obtained prior to the expiry of the term on proof being made that the land has been maintained free from prickly pear for three years consequent on the eradication having been completed in advance of the prescribed period.

(xi.) *Sales by Auction.* The Governor may proclaim any town or suburban Crown lands to be sold by auction. All such lands must be distinguished as town or suburban lots, according to their respective positions, and must be offered as nearly as possible according to the following scale:—Town lands in allotments of from one rood to one acre, at an upset price of £8 per acre; suburban lands, if within one mile from town lands, in lots of from one acre to five acres, and if over one mile from town lands, in lots of from one to ten acres, the upset price being £2 per acre. In respect of country lands, the maximum area that may be sold by auction in any one year is 500,000 acres, and the upset price is fixed at £1 an acre for lands classed as agricultural, and not less than ten shillings per acre in the case of other lands. In sales by auction both of country and of town lands, a deposit, as specified in the proclamation, must be paid at the time of sale, and the balance, including the value of improvements on the land, together with assurance and survey fees, must be paid according to the conditions stated in the proclamation, under which the time for payment may not be extended for more than ten years from the date of sale.

6. **Co-operative Settlement.**—Under the Co-operative Communities Land Settlement Act of 1893, and the amending Acts of 1894 and 1895, provision is made for the setting apart of a portion of Crown lands for the purposes of a group or association of persons for co-operative land settlement, and the condition annexed thereto is that the group shall consist of not less than thirty persons, each of whom must be eligible to hold

land as a selector under the Lands Acts. The group may register itself under the Friendly Societies Act of 1876, and must be recognised by the Minister, and the rules of the community must be deposited with him. The area available is set apart by proclamation, and cannot exceed 160 acres for each member. The proclamation specifies and defines the name of the group; the boundaries and description of the area set apart; the amount of rent to be paid; the improvements to be made; and the period for which the area is set apart (not more than twelve nor less than six years). A sum equal to at least two shillings and sixpence per acre must be expended during each of four equal portions of the lease, and failing that, resumption of the land and the consequent dissolution of the group take place. On the expiry of the lease, all conditions having been complied with, the members are entitled to a deed of grant of the freehold of the area specified in the proclamation, the division of the area being left to the members themselves. Provision is also made for the establishment of Labour Colonies by proclamation setting apart an area, not larger than 10,000 acres in extent, which is vested in five trustees, with full powers to manage the colony and to establish any trade or industry.

7. **Closer Settlement.**—Under the provisions of the Closer Settlement Act of 1906 private lands may be repurchased by the Crown, either by agreement or compulsorily. The price of all land so acquired is paid for in cash from the Consolidated Revenue Fund, or in cash the proceeds of the sales of debentures, or at the option of the Minister, and with the consent of the owner, wholly or in part by the issue to the owner of debentures. Any land which it is proposed to acquire under the provisions of the Act must be inspected by a member of the Land Court, who must furnish a report to the Minister; the land may thereupon be acquired by agreement, with the approval of the Governor-in-Council, at a price not exceeding by more than one-tenth the value thereof stated in the said report.

(i.) *Compulsory Acquisition.* The compulsory provisions of the Act only apply where the private land proposed to be acquired exceeds £20,000 in value, exclusive of improvements. All claims for compensation are determined by the Land Appeal Court, whose award is final and without appeal. The owner of an estate in possession, the whole of which is proposed to be taken compulsorily, has the right to retain in one block out of the estate, for the purposes of residence or business, land the value of which (exclusive of improvements) does not exceed £10,000, or £15,000 in the case of an estate the unimproved value whereof exceeds £50,000, or £20,000 in the case of an estate the unimproved value whereof exceeds £100,000. The maximum sum which may be expended on the acquisition of land for the purposes of closer settlement is £500,000 in any one year.

(ii.) *Disposal of Land.* A sufficient part of the land acquired must be set apart for roads, public reserves, and townships, and the remainder is proclaimed open for selection as agricultural farms under the Land Acts 1897 to 1902; the term of the lease is, however, twenty-five years instead of twenty years as provided by the Land Acts. The selector must fence the land within two years from the issue of the license to occupy, or must make permanent improvements of an equivalent value. The rent to be paid for the first year is equal to £10 for every £100 of the purchasing price; and (no payment being required during the second, third, or fourth years) an annual payment of £8 2s. 7d. for every £100, continued from the fifth to the twenty-fifth year will, at the end of the term, have paid off the principal sum together with interest. Payment of the balance of the purchase money may be made at any time after the expiration of the fifth year of the lease, and a rebate of interest will be made accordingly. Land remaining open for selection as agricultural farms for at least twelve months may thereafter be proclaimed also open for selection as unconditional selections.

8. **Areas Alienated, in Process of Alienation, and Areas Occupied under Lease or License, 1901 to 1906.**—The following table shews the area of land alienated absolutely,

the area in process of alienation, and the area held under various forms of lease and license at the end of each year from 1901 to 1905 inclusive, and on the 30th June, 1906 :—

QUEENSLAND.—AREA OF LAND ALIENATED ABSOLUTELY, IN PROCESS OF ALIENATION, AND AREA HELD UNDER LEASE OR LICENSE AT THE END OF EACH YEAR FROM 1901 TO 1906.

Particulars.	Area in Acres					
	1901.	1902.	1903.	1904.	1905.	1906.
1. *Area Alienated Absolutely*—						
By Purchase	13,462,304	13,588,572	13,695,403	13,956,341	14,174,907	14,504,707
Without Payment	71,164	74,874	75,322	75,545	77,757	80,853
2. *Area in Process of Alienation*	2,791,664	3,160,909	3,220,402	3,165,737	3,407,210	3,737,083
3. *Area Occupied under Leases and Licenses*—						
Runs in Settled Districts ...	176,000	106,080	106,080	510,800	179,722,320	182,384,400
Runs in Unsettled Districts...	222,553,760	221,719,680	215,844,400	181,187,920		
Occupation Licenses ...	35,103,600	44,801,760	40,854,800	32,812,000	37,085,040	39,354,240
Grazing Farms & Homesteads	21,793,242	22,550,073	20,403,753	21,405,356	22,997,960	24,961,495
Scrub Selections	272,946	228,254	264,030	218,790	251,549	252,608
Gold Mining and Mineral Leases in Force	86,848	86,481	93,473	79,921	92,613	102,686
Leases for Special Purposes...	249	3,149	2,880	3,122	3,133	3,789
Total Land Occupied ...	296,311,777	306,319,832	294,560,523	253,415,582	257,812,489	265,381,856
Remainder Unoccupied...	132,808,223	122,800,168	134,559,477	175,704,468	171,307,511	163,738,144

Area of State—429,120,000 acres.

Corresponding figures for previous years may be obtained from the Statistical Registers of Queensland.

9. **Areas Occupied for Pastoral Purposes, 1901 to 1906.**—The following table shews the areas held under various tenures for pastoral purposes at the end of each year from 1901 to 1906 inclusive :—

QUEENSLAND.—AREAS OCCUPIED UNDER DIFFERENT TENURES FOR PASTORAL PURPOSES, INCLUDING RESUMED PARTS OF RUNS, AT THE END OF EACH YEAR FROM 1901 TO 1906 INCLUSIVE.

Particulars.	Area in Square Miles.					
	1901.	1902.	1903.	1904.	1905.	1906.
Pastoral Leases Act 1869	39,306¼	41,931¼	35,938⅜	16,259⅛	11,423¼	5,494
Crown Lands Act 1884	243,585¾	238,752¾	230,638¼	118,335	65,992⅞	31,643¾
Land Act 1897	15,046½	14,937¼	14,937¼	10,993½	10,679⅞	3,347½
Pastoral Leases Act 1900	50,076¾	50,721½	53,196	34,176½	31,589⅝	27,250⅜
Pastoral Holdings New Leases Act 1901	—	260	260	108	108	129⅛
Land Act 1902	—	—	2,452¾	104,032⅛	161,022½	187,561
Totals	348,015¼	346,602¾	337,422⅝	283,904¼	280,816⅛	255,425¾

10. **Areas of Holdings Selected, 1901 to 1906.**—The progress made in the settlement of Crown lands in Queensland may be seen from the following statement, which gives the areas of accepted applications for selections, excluding selections under the Agricultural Lands Purchase Acts, during each year from 1901 to 1906 inclusive :—

QUEENSLAND.—AREAS SELECTED BY SETTLERS DURING EACH YEAR FROM 1901 TO 1906, EXCLUDING SELECTIONS UNDER THE AGRICULTURAL LANDS PURCHASE ACTS.

Particulars.	Area in Acres.					
	1901.	1902.	1903.	1904.	1905.	1906.
Agricultural Farms	160,804	168,301	124,026	136,092	254,117	438,605
Agricultural Homesteads	155,512	118,246	89,037	73,705	97,543	96,561
Unconditional Selections	24,322	15,464	10,449	14,758	10,586	25,262
Grazing Farms	1,371,283	1,410,364	709,183	1,244,072	1,738,882	2,067,275
Grazing Homesteads	290,785	171,104	123,026	176,435	120,982	404,499
Scrub Selections	48,450	51,058	5,423	200	31,457	9,562
Prickly Pear Selections	—	—	—	12,866	19,527	148,493
Total area selected ...	2,051,156	1,935,362	1,061,528	1,658,128	2,273,094	3,190,257

10. **Closer Settlement.**—The operations under the Agricultural Lands Purchase Acts 1894 to 1905 (now repealed by the Closer Settlement Act 1906) resulted up to the end of the year 1906 in the acquisition by the Government of twenty-four estates, of a total area of 381,725 acres, at a total cost of £884,158. Of this area 301,908 acres had been selected, and 48,817 acres were open for selection on the 31st December, 1906; the total purchasing price of the area selected up to this date was £889,765, and the total sum paid in rent (including penalties) amounted to £329,111. The following table gives particulars of the operations under the above Acts at the end of each year from 1901 to 1906, inclusive:—

QUEENSLAND.—PARTICULARS OF OPERATIONS UNDER THE AGRICULTURAL LANDS PURCHASE ACTS 1894 TO 1906.

Year.	Number of Estates Acquired.	Total Area Acquired to Date.	Total Amount of Purchase Money.	Total Area Selected to Date.
		Acres.	£	Acres.
1901	15	132,760	335,056	124,710
1902	19	266,925	699,815	230,149
1903	20	286,952	790,445	253,096
1904	21	308,605	877,058	277,939
1905	21	308,605	877,058	289,873
1906	24	381,724	968,844	301,908

§ 5. South Australia and Northern Territory.

1. **Settlement in Early Days.**—In the year 1834 a Bill for the colonisation of South Australia was passed by the British Government, and under this Act the colony was founded. It provided for the appointment by the Crown of three or more Commissioners to carry certain parts of the Act into execution; they were to declare all the lands of the colony, excepting areas reserved for roads and footpaths, to be open to purchase by British subjects, and to make regulations for the survey and sale of such lands at such price as they might deem expedient, and for letting unsold lands for periods of not less than three years. They might sell the land by auction or otherwise, but for ready money only, at a uniform price, but not less than twelve shillings per acre. The Commissioners were restrained from entering upon the exercise of their general powers until they had invested £20,000 in Exchequer bills, and until land to the value of £35,000 had been sold. There was some difficulty in disposing of a sufficient quantity of land to enable the Commissioners to realise the required sum of £35,000, however, and to secure funds

sufficient to enable them to found the colony. The price of the land had at the outset been fixed at £1 per acre, and each land order was for eighty acres of country land, and one acre of town land. About this time the South Australian Company was formed, and an offer was made by this company to purchase the remaining lots of land, provided the price was reduced to twelve shillings an acre. This proposal was readily accepted by the Commissioners, and a sufficient quantity of land having been sold, the investment of £20,000 as required by statute was completed. The principles on which the colony was established originated with Mr. Edward Gibbon Wakefield. He had observed the evils which, in other colonies, had arisen from the grants of large tracts of country to intending settlers, out of all proportion either to individual requirements or to the capacity of grantees to successfully deal with. The main idea in Wakefield's scheme was the sale of waste or unappropriated lands at a high price, and the application of the revenue thus obtained to the introduction of immigrants, thus securing a constant supply of hired labour for the cultivation of the land, and for the progress of settlement. Other leading features of the scheme were that no convicts should be transported; that no State church should be established, and that the new colony should be financially independent. and not be a charge on Great Britain.

2. **History of Land Legislation.**—The Wakefield system fell into disfavour owing to the financial crisis of the early forties, and had soon to be modified. It was not until 1872, however, that an Act was passed more in conformity with the legislation of the neighbouring States, and giving to settlers with only a small amount of capital an opportunity of settling upon the lands of the Crown under fair conditions, and with a reasonable chance of success.

(i.) *The Torrens Act.* Reference may here be made to the Real Property Act. which was originated in South Australia by the late Sir R. R. Torrens in the year 1858, and which has been adopted in all the States of the Commonwealth, and also in New Zealand. The objects of this Act are to give security and simplicity to all dealings with land, by providing for such registration of title as shall admit of all interests which may appear upon the face of the registry being protected, so that a registered title or interest shall practically never be affected by any claim or charge not registered. By this system everyone who acquires an estate or interest in land, upon being registered as owner thereof obtains a title if not absolutely at least practically secure as against everyone whose claim does not appear upon the registry; and the two elements of simplicity and security as regards the acquisition of land appear to be effectually attained.

(ii.) *Lands Acts now in Force.* The Lands Act of 1872, referred to above, in course of time gave way to other measures, and the regulations now in force are those of the Crown Lands Act of 1888, as amended in 1889, 1890, 1893, 1894, 1895, 1896, 1897, 1898, 1899, the whole being consolidated in the Lands Act of 1903, which in turn has been amended in 1905 and 1906.

3. **Administration and General Provisions.**—The Land Board, composed of three members, arranges the subdivision of lands and fixes the price at which each block is to be offered. When approved by the Commissioner the lands are gazetted as open to application, which must be made in writing, and must specify the name, address, and occupation of the applicant, and the land applied for. A month's notice is usually given, during which applications may be made. No person under eighteen years of age can hold a lease, agreement, or license under the Act. The applicant has the choice as to whether he will take the land on perpetual lease or on an agreement to purchase, except in the case of repurchased lands and lands within the schedule to the Pinnaroo Railway Act, which are offered on agreement to purchase only. As early as possible after the date for receiving applications the Board meets, takes the evidence of applicants, and allots the blocks to each applicant who, in the opinion of the Board, should have the block. Preference is given to applicants who will reside on the land applied for, involving continuous residence on the land for at least nine months in each year. Other considerations which assist the Board to come to a decision are the ability, through means and

experience, to utilise and improve the land applied for, and the number of members of the family which would become settled on the land. Any blocks not allotted on the date fixed may be applied for, and may be allotted on application. Agreements and leases are liable to forfeiture if payments due thereunder are six months in arrear and remain unpaid for three months after the same have been demanded, or for breach of any of the covenants or conditions. In place of forfeiture of any lease or agreement the holder's interest therein may be sold by auction, the proceeds to pay all arrears on the land and expenses of sale. If any balance remains the outgoing holder may be paid for substantial improvements made by him on the land. Any purchase-money the outgoing holder may have paid on the land sold may also be reimbursed to him if the proceeds of the sale admit. Interest at the rate of 5 per cent. is charged on arrears due under leases and agreements; if over two months in arrears the Commissioner may recover the same in court. No perpetual lease or agreement to purchase is granted for lands the unimproved value of which exceeds £5000, or in such a way that the lessee or purchaser would hold lands under any tenure, except under pastoral lease, the aggregate unimproved value whereof would, in the opinion of the Board, exceed £5000. Exceptions are made in cases where land to be included in the lease or agreement is suitable only for pastoral purposes, the carrying capacity thereof unimproved, and of all other lands held by the lessee or purchaser under any tenure not exceeding 5000 sheep; if the land is outside Goyder's line[1] the limitation may be increased to a carrying capacity of 10,000 sheep. Municipal Corporations and District Councils may apply for land in the same manner as individuals.

4. **Modes of Tenure.**—The principal forms of land tenure under the Crown Lands Acts are as follows:—(i.) Perpetual leases; (ii.) agreements to purchase; (iii.) miscellaneous leases; (iv.) grazing and cultivation leases; (v.) village settlements; (vi.) homestead blocks; (vii.) closer settlements; (viii.) sales by auction; (ix.) leases of reclaimed lands; (x.) purchases for special purposes; (xi.) licences. Land may also be acquired under the provisions of the Pinnaroo Railway Act of 1903, and the occupation of land for pastoral purposes is regulated by the Pastoral Act of 1904. In the Northern Territory land may be acquired either under the Northern Territories Crown Lands Act of 1890 or the Pastoral Act of 1899.

(i.) *Perpetual Leases.* Any Crown lands which have been surveyed, or the boundaries thereof delineated on the public maps, are available for perpetual lease. The area and rent are determined by the Commissioner on the recommendation of the Land Board, and applications therefor, must be accompanied by a deposit of 20 per cent. of the first year's rent, as notified in the *Gazette*. The lessee is required to execute and deliver the lease within twenty-eight days, and to pay the balance of the first year's rent and the prescribed fees within the same period. The land is vested in the lessee in perpetuity, and the rent is determined by the Board for each term of fourteen years, at least twelve months before the expiration of such period of fourteen years. If the lessee does not accept a revaluation of the rent within six months, his lease determines at the then current period of fourteen years of his lease. All perpetual leases not subject to revaluation of rent are liable to the land tax, and the rent originally reserved shall be payable during the whole of the term. In respect of any land which, on account of deficiency of rainfall, is only suitable for pastoral purposes, the rent of such land is fixed at pastoral rates. The Crown reserves the right to resume any part of the land for the purposes of roads, tramways, railways, mining, etc., on making reasonable compensation to the lessee, and there is also in all leases a reservation to the Crown of all minerals, precious stones, coal, and mineral oils. The lessee may, after six years, with the consent of the Commissioner, sublet the whole or any part of his holding for a period not exceeding three years.

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[1] Goyder's line is not exactly based on rainfall, but on the evidence of vegetation ("salt-bush" and "blue-bush," etc.), and marked the northern limit of what was thought to be fit land for agricultural pursuits. The vegetation which was supposed incapable of flourishing in regions of regular rainfall afforded the indications for locating the line.

(ii.) *Agreement to Purchase.* No lands may be held under this form of tenure unless they have been surveyed, or their boundaries delineated on the public maps. The Commissioner, on the recommendation of the Land Board, determines the area of blocks, and the price and annual rent at which each block may be taken up on lease with the right of purchase. Applications must be made in writing to the Commissioner, and must be accompanied by a deposit equal to the first half-yearly instalment of the purchase-money of the land and improvements. The purchaser must covenant to pay for his block at the price fixed by the Land Board, and to pay the purchase-money and interest for land and improvements, if any, at not less than the rate of 2 per cent. per annum by sixty equal half-yearly instalments payable in advance. Having complied with the terms and conditions of the agreement, the purchaser has the option of completing the purchase of his block at any time after the expiration of six years, on paying all principal due under his agreement and all interest due up to the time of purchase. Where the land is allotted on personal residence, each agreement must contain a covenant for personal residence by the purchaser on the lands purchased for nine months during each year. The conditions as to reservation of Crown rights, and also as to subletting, are the same as in the case of perpetual leases. The rent for the term of any renewed lease with a right of purchase is fixed by the Board by revaluation at least twelve months before the expiration of the original lease, and the renewed lease contains a right of purchase exercisable at any time during the term of the renewed lease. In fixing the purchase-money and rent for a renewed lease the Board, in cases of revaluation, does not consider the value of the improvements made.

(iii.) *Miscellaneous Leases.* Leases of Crown lands, not exceeding 640 acres in extent, may be granted on such terms and conditions as the Governor may think fit to any *bonâ-fide* discoverer of any guano or other valuable substance or deposit (not including minerals).

The Governor has power to resume possession of any well or place where water has been found, and also of not more than one square mile of land contiguous thereto. If the water so found is artesian the area resumed may be increased to five square miles. The Governor may offer a lease of such land resumed by private contract or public auction.

Leases may also be granted by sale by auction for a term not exceeding twenty-one years of any Government buildings not required for Government purposes or of any Crown lands, for a variety of purposes, such as—for obtaining guano, stone, clay, or earth; for sites for inns, stores, factories, wharves, or for any other purpose approved by the Commissioner. Leases of lands comprised within any forest reserve may also be granted for any term not exceeding forty-two years.

(iv.) *Grazing and Cultivation Leases.* Every miscellaneous lease under any of the Crown Lands Act for grazing and cultivation purposes, or grazing purposes only, is held to have been lawfully granted, and the power of resumption, if required for any purpose of public utility, is reserved to the Crown. Any lessee under any such miscellaneous lease may, with the consent of the Commissioner, cultivate the whole of the land without rendering the lease liable to forfeiture, provided that no trees be injured or timber be cut down or destroyed without the consent of the Commissioner.

(v.) *Village Settlements.* Out of the reserved lands the Commissioner is directed to set apart for the purpose of village settlement such land as he shall consider fit (1) for horticultural purposes, to be termed "horticultural land"; (2) for agricultural purposes, to be termed "commonage land"; and (3) land whereon any irrigation works are situated. Land so set apart is to be divided as follows:—Horticultural lands into blocks of as nearly as practicable equal unimproved value, and of about ten acres in extent; and the commonage lands into one or more blocks of such area as the Commissioner may determine, and the lands so set apart in each case form the district of the association. Upon such subdivision separate valuations are to be made of the irrigation works in each district, of the improvements on each block, and of all the personal estate belonging to each association. In the event of the Commissioner and any association not agreeing as to valuation, provision is made for arbitration under the Arbitration Act of 1891. When the valuation in a district is agreed or fixed, the Governor has power to determine the occupancy by any person or association of any reserved land, which thereupon reverts to the Crown. The Commissioner may forthwith lease such of the horticultural blocks within an area which has reverted to the Crown as he may think fit to individual members of the association on perpetual lease, or to a person not a member of any association, and thereupon such person becomes a member of the association in whose district the block is situated. No person may hold more than two blocks. Commonage lands may only be leased to the association on perpetual lease, and all unleased horticultural blocks are under the control of the association. The annual rent reserved by any lease is fixed by the Board, and commences at a date fixed by the Commissioner. The value of the improvements on each horticultural block, and interest thereon at 4½ per cent. per annum, is a first charge upon the block, and is to be paid by forty-two annual instalments. The value of irrigation works and of improvements on commonage lands, and interest at the rate of 4½ per cent. per annum, is a first charge on the property of the association, and is repayable in forty-two annual instalments, and if the association defaults the members are liable for a limited proportion. The Commissioner is empowered to expel any member from any association: to control the expenditure of any moneys by associations; to call upon any trustee of an association to retire; to require an association to increase the number of its members; to make, amend, and repeal rules for the management of an association, and for the regulation of any irrigation works. Every member of each association must provide or contribute towards the maintenance and regulation of irrigation works and the care and cultivation of the commonage lands, such labour (not being less than thirty-six days every six months) as the Commissioner may require, or an equivalent sum in cash. Every association must prepare an account once a year of the working of the commonage land, shewing all expenditure and income in connection therewith, and after providing for rent, working expenses, and for depreciation and renewal of plant, the surplus, after deducting 25 per cent. for sinking fund for renewal of plant, etc., may be divided among the members of the association.

(vi.) *Homestead Blocks.* The Commissioner may cause any Crown lands reserved for the use of aboriginals, except such lands as are reserved for the occupation of aboriginals at Point McLeay or Point Pearce, to be surveyed and offered as homestead blocks on perpetual lease or lease with a right of purchase, and may, subject to the approval of Parliament, by purchase, exchange, or otherwise, acquire lands suitable for homestead blocks, and lease them in a similar manner. Each block must not exceed £100 in value, and must be resided on at least nine months every year by the lessee or purchaser, or by his wife or member of his family. The holder may have his lease or agreement endorsed "Protected Homestead Block," and the effect of such endorsement will be that no subsequent encumbrance on the land by the holder will be valid, nor will the block be liable to seizure for debt, except for rates and taxes, nor, unless so willed, will it become assets for payment of debts after the death of the holder. If a holder is unable to continue in occupation of his block he may, on the recommendation of the Land Board, and with the Commissioner's consent, assign or sublet it.

Advances up to £50 may be made by the Commissioner to any homestead blockholder who has complied with the conditions of his lease or agreement, to assist in erecting permanent buildings on the blocks and other improvements which permanently increase the capital value thereof, such as clearing the land, fencing the same, erecting or making thereon permanent water improvements, such as dams, wells, reservoirs, watercourses, windmills, etc. The advances must not exceed half the cost to the blocker of the improvements then in good repair on the land. Advances must be repaid, with interest at 4 per cent. per annum, by twenty equal instalments, commencing twelve months from the date of advance. The whole amount may, however, be repaid at any earlier date. Failure to repay renders the holding liable to cancellation, and a grant of the land cannot issue until the advance is repaid. The Commissioner may, in case of hardship, extend the time for repayment, deferred payments bearing interest at 5 per cent. per annum. No buildings are to be removed, nor other improvements destroyed or injured, while any portion of an advance remains unpaid; nor would any subsequent mortgage or encumbrance be valid till the whole advance is repaid; all buildings must be insured.

(vii.) *Closer Settlement.* The Commissioner may repurchase land for the purposes of closer settlement, at a cost not exceeding £200,000 in any one year, subject to the conditions (1) that the repurchase be recommended and the improvements valued by the Board and the Surveyor-General, and (2) that full particulars as to the locality, area, and quality of the land, and the price paid, are laid before Parliament. Repurchased land, except such portions as may be required for town lands, which are sold by auction, or for reservation for public purposes, are cut up into blocks, each of which does not exceed £2000 in unimproved value, or in the case of improved blocks or grazing land does not exceed £4000. These blocks are offered for sale, and the purchaser must enter into an agreement to purchase his block and the improvements at the price fixed by the Board, and to pay the purchase-money and interest thereon at 4 per cent. per annum by seventy half-yearly instalments, the first ten payments being interest only. Purchase may be completed by paying the balance of the purchase-money after holding the land for nine years. Each person holding an agreement to purchase repurchased lands must spend in substantial improvements on his block, during each year for the first five years, a sum equal to £3 for every £100 of his purchase-money. Should any repurchased land remain unallotted over a year after being offered, it may be offered on miscellaneous lease on terms fixed by the Board, or, if the Board so recommend and the Commissioner approve, it may be sold by public auction, a reserve being fixed by the Board, the terms being 25 per cent. of the puchase-money in cash, and the balance in five yearly instalments, bearing interest at 4 per cent. per annum. Any amount in arrear on repurchased lands may, with interest at 5 per cent., be sued for in court by the Receiver of Rents.

(viii.) *Sales of Land by Auction.* The following lands may be sold by auction for cash:—(1) Special blocks. Any single section of Crown lands which may be surrounded by lands sold or contracted to be sold, and any section or block of land (not exceeding 100 acres in area) which may be required for the establishment of any industry, trade, or business. (2) Crown lands which have been offered for perpetual lease, and not taken up for two years. (3) Town lands. (4) Suburban lands, which the Governor by proclamation may except from being dealt with by the Board. The upset price of any land offered at auction is determined by the Commissioner, and 20 per cent. of the purchase-money must be deposited within one month, or within such extended time as the Commissioner may allow. Purchase-moneys derived from the sale of lands by auction are paid into a fund primarily applicable to the payment of such portion of the public liabilities as shall be specially charged thereon.

(ix.) *Reclaimed Swamp Lands.* These are subdivided and offered on perpetual lease in the same manner as other lands are offered. The rent may not be less than 4 per cent. per annum on the cost of reclaiming and the unimproved value of the land. During the first year only one-quarter of the annual rent need be paid, one-half during the second year, three-quarters during the third year; afterwards the whole annual rent must be paid yearly. No person may hold more than two blocks of reclaimed lands. Any of these lands remaining unallotted for a year may be let at reduced rental, or on miscellaneous lease.

(x.) *Sites for Special Purposes.* The Governor may, with the consent of the holders of a lease or agreement, grant not over two acres of land for a site for a school, church, chapel, or other public or charitable purpose, or one acre for a shop, mill, store, or a post office, provided that the land is not within five miles of any town lands. The purchase-money for such land must be paid at the time of application.

(xi.) *Licenses.* Licenses to remove timber, stone, guano, manure, shell or seaweed from Crown lands, and for fishermen's residences and drying grounds, for manufactures, slaughter-houses or saw mills, for depasturing stock, or other approved purposes for any term not exceeding a year, may be granted by the Commissioner or any person authorised by him on payment of fee as fixed by regulation.

5. **Pinnaroo Railway Act 1903.**—Under this Act provision is made by which certain scheduled lands, amounting to about 1,500,000 acres of good agricultural country in the vicinity of a railway line from Pinnaroo to Tailem Bend, a distance of eighty-seven miles, the construction of which line was authorised by the Act, and which was opened for traffic in 1906, may be sold by the Crown under agreement, with a covenant to purchase the same at the price fixed by the Land Board, together with interest thereon at the rate of 2 per cent. per annum, by sixty half-yearly payments, payable in advance. It was specially provided that the construction of the railway should not be commenced until at least 100,000 acres of the lands scheduled to be sold under agreement to purchase had been allotted. Any purchaser may complete his purchase at any time. Application is to be made, the price fixed and accepted, the agreement entered into and executed, and all matters in connection with the sale, transfer, resale, surrender, and forfeiture of any of the lands are to be carried out, as far as practicable, as if the lands were taken up under the existing regulations as to the acquisition of land for the purposes of closer settlement.

6. **The Pastoral Act 1904.**—This Act deals with Crown lands which do not come within the scope of the Lands Acts. The Act is administered, under the Commissioner of Crown Lands, by a Board consisting of three members appointed by the Governor. The duties of the Board are to decide upon the area, rent, and term of lease of land, and to allot the same. In fixing the size of the blocks allotted regard is paid to natural features, so as to utilise improvements and waters to each block as equally as possible. The amount to be paid for any improvement is fixed, distinguishing between amounts payable to the Crown and to the outgoing lessee.

(i.) *General Provisions.* Notice of land available is published in the *Gazette*, shewing the area, situation, term of rent of each block, price to be paid for improvements, and the cost of valuing such improvements. Any land not applied for within a month of the date of the notice may be reoffered at a reduced price, and so on at intervals of three months until applied for. Each application must be accompanied by a quarter of a year's rent and 5 per cent. of the price payable for improvements, or 10 per cent. if the improvements do not belong to the Crown. The successful applicant must pay the balance of the first year's rent and the lease fee within one month after allotment. A lease does not entitle the holder to mining rights, or to remove timber, but only to use the surface of the land for pastoral purposes, or for other purposes approved by the Commissioner.

(ii.) *Terms and Conditions.* The term of the lease is forty-two years, unless the land is likely to be required for closer settlement, when the term is twenty-one years; forty-two-year leases are subject to revaluation of rent for the latter twenty-one years. In determining the rent the Board must in all cases have regard to the land's carrying capacity for stock, its value for other purposes, its proximity and facility of approach to railways, ports, rivers, or markets. Within twelve months of the expiry of a lease all improvements on the land must be valued, and their position indicated on a plan. Unless already improved up to £3, every lessee is required to expend in improvements on the land a sum fixed by the Board, not exceeding ten shillings per mile per annum, until at least £3 per mile has been so expended. Payment for improvements belonging to the Crown may be made by annual instalments, extending if desired over forty-two years, the lessee meanwhile keeping such improvements in repair. Improvements must consist of wells, tanks, dams of a permanent character, machinery and appliances for raising water, vermin-proof or other fences, huts or sheds erected for residence or shearing or other purposes required in connection with live stock.

(iii.) *Resumption of Pastoral Lands.* Any run may be resumed for public works, sites for a town or cemetery, for mining, or for park lands, on a month's notice; or for intense culture, after the first ten years of the term, after a year's notice. The lessee is entitled to compensation for land resumed from his run, or for loss or depreciation in value of his lease caused by such resumption, and for improvements. The Commissioner or any person authorised by him, may enter on any run to sink bores or wells, or to construct dams or other water conservation works, outside of one mile from any improvements consisting of well, dam, or building worth £100. If water is so discovered, an area of one square mile may be resumed, and a lease thereof granted to the discoverer. Where artesian water is discovered, five square miles may be resumed. If a lessee discovers artesian water on his run, at least ten miles from any other artesian supply on his run, which yields not less than 5000 gallons per day of water suitable for stock, he is entitled to 100 square miles of land surrounding the well, rent free for ten years, for each well so discovered up to four. The cost at the nearest port or railway station of barbed wire and netting required for vermin-proof boundary fences may be advanced to the lessee by the Commissioner in certain cases, upon the recommendation of the Board. after wire and netting to the amount of such cost have been utilised in vermin-proofing boundary fences. These advances bear interest at 4½ per cent. per annum, principal and interest being repaid in twenty equal annual instalments of £7 13s. 9d. for every £100 advanced. Leases may be granted to charitable incorporated bodies for any term not over twenty-one years, at such rent and terms as the Governor may think fit, of land for aboriginal reserves, in blocks not exceeding 1000 square miles, with right of renewal so long as the land is used for the aboriginals.

7. **The Northern Territory.**—In 1863 so much of the State of New South Wales as lay to the north of lat. 26° S., and between long. 129° and 138° E., was annexed to South Australia. This portion of the continent is under the administration of a Resident, appointed by the Government of South Australia.

(i.) *Various Modes of Tenure.* The Northern Territory Crown Lands Act of 1890 provided for leases with covenant to purchase, and for perpetual leases, for sales for cash, for agricultural leases, and for leases and licenses for special purposes. Leases with a covenant to purchase are for a term of twenty-one years, with a right of renewal, and the purchase price must not be less than five shillings an acre. Town and suburban lands may be offered for sale by auction at an upset price of £1 an acre, and country lands at an upset price of ten shillings an acre; 20 per cent. of the amount of the purchase-money must be paid at the time of sale, and the balance within one month. Agricultural leases may be granted in blocks of not more than 640 acres. All gold and minerals are reserved to the Crown.

(ii.) *Pastoral Leases.* Leases for pastoral purposes are regulated by the Pastoral Act of 1899, which provides that leases may be granted for a term of forty-two years, at an annual rental of sixpence per mile for the first seven years, not less than one shilling per mile for the second period of seven years, and two shillings for the third period of seven years; the rent for the remainder of the term is fixed by valuation. It is also provided that land may be offered for sale by auction at an upset price of sixpence per mile for the full term of forty-two years, the lessee undertaking to stock the land before the end of the third year with five head of sheep or one head of cattle per square mile, and before the end of the seventh year to increase the stock to ten sheep or to two head of cattle per square mile. The land may be resumed for public purposes upon three months' notice, or for other purposes upon two years' notice. Since the year 1902 long leases for pastoral purposes have not been granted. Land has been let only on annual permits; if the holder of a permit can shew that he is making good use of the land, and if no application has been made for it for agricultural purposes, the permit is extended.

(iii.) *Special Leases.* Discoverers' leases may be granted for areas not exceeding 640 acres for coal, petroleum, guano, etc. Special leases may be sold at auction for the purpose of obtaining clay and stone, as sites for stores, inns, wharves, factories, etc.

8. **Areas Alienated (wholly or conditionally) and Areas held under Lease, 1901 to 1906.**—The subjoined tables shew for South Australia proper and for the Northern

Territory respectively the area of land alienated absolutely, and in process of alienation under deferred payments, and the area held under different forms of leases. The area of the State of South Australia south of lat. 26° S. is 243,244,800 acres, and of the Northern Territory, 335,116,800 acres, making a total of 578,361,600 acres:—

SOUTH AUSTRALIA (PROPER).—AREA ALIENATED AND IN PROCESS OF ALIENATION, AND AREA HELD UNDER LEASE, 1901 TO 1906.

Particulars.	Area in Acres.					
	1901.	1902.	1903.	1904.	1905.	1906.
1. *Area Alienated—*						
Sold	7,413,510	7,533,499	7,678,007	7,899,173	7,992,302	8,065,792
Granted for Public Purposes	121,613	121,705	121,722	121,735	121,822	121,829
2. *Area in Process of Alienation—*	553,774	451,232	344,258	310,589	455,381	759,337
3. *Total Alienated and in Process of Alienation*	8,088,897	8,106,436	8,143,987	8,331,497	8,569,505	8,946,958
4 *Area held under Lease—*						
Right of Purchase Leases ...	5,639,519	5,640,488	5,528,011	5,186,467	4,898,422	4,724,954
Perpetual Leases	7,115,782	7,652,494	8,536,990	9,607,388	10,573,154	11,445,372
Pastoral Leases	68,916,125	72,408,435	73,368,105	75,154,310	76,402,950	76,685,510
Other Leases	3,905,729	3,551,187	2,896,996	2,473,940	2,273,383	2,113,718
Total held under Lease...	85,577,155	89,252,604	90,330,042	92,422,105	94,147,909	94,969,554
5. *Total Area in Occupation* ...	93,666,052	97,359,040	98,474,029	100,753,602	102,717,414	103,916,512
6. *Remainder Unoccupied...* ...	149,578,748	145,885,760	144,770,771	142,491,198	140,527,386	139,328,288

Total area of State (proper), south of lat. 26° S., 243,244,800 acres.

Corresponding figures for previous years may be obtained from the Statistical Registers of South Australia.

NORTHERN TERRITORY.—AREA ALIENATED AND AREA HELD UNDER LEASE FROM 1901 TO 1906.

Particulars.	Area in Acres.					
	1901.	1902.	1903.	1904.	1905.	1906.
1. *Area Alienated—*						
Sold	473,230	473,230	473,230	473,230	473,231	473,232
Granted for Public Purposes...	48	48	48	48	48	48
Total Alienated ...	473,278	473,278	473,278	473,278	473,279	473,280
2. *Area Leased—*						
Right of Purchase Leases ...	1,067	1,227	1,407	1,567	2,087	2,397
Pastoral Leases	111,476,240	113,755,920	104,609,200	104,641,200	102,030,240	108,347,680
Other Leases	1,176,981	108,821	28,181	28,181	1,248,019	1,376,010
Total Leased ...	112,654,288	113,865,968	104,638,788	104,670,948	103,280,346	109,726,087
3 *Total Area in Occupation* ...	113,127,566	114,339,246	105,112,066	105,144,226	103,753,625	110,199,367
4. *Remainder Unoccupied* ...	221,989,234	220,777,554	230,004,734	229,972,574	231,363,175	224,917,433

Total area of Northern Territory, 335,116,800 acres.

Corresponding figures for previous years may be obtained from the Statistical Registers of South Australia.

9. **Areas Acquired and Disposed of for Purposes of Closer Settlement, 1902 to 1906.**—The following table shews the area of land acquired by the Government in South Australia for the purposes of closer settlement, and the manner in which the same has been disposed of under the provisions of the Crown Lands Acts:—

SOUTH AUSTRALIA (PROPER).—STATEMENT SHEWING AREA OF LAND ACQUIRED FOR CLOSER SETTLEMENT, AND THE DISPOSITION THEREOF, FOR THE YEARS 1902 TO 1906.

Particulars.	Area in Acres.				
	1902.	1903.	1904.	1905.	1906.
1. *Area of Lands Repurchased to Date*	156,481	156,481	174,963	214,752	260,355
2. *Agreements with Covenants to Purchase* ..	—	60,331	81,556	116,854	168,930
3. *Total Area Leased as Homestead Blocks*—					
(i.) Right of Purchase	2,717	2,487	2,268	2,057	1,930
(ii.) Perpetual Lease	3,073	2,895	2,795	2,907	2,482
4. *Perpetual Leases*	90,128	89,378	86,881	82,431	78,642
5. *Miscellaneous Leases*	309	274	295	295	295
6. *Sold*	403	566	626	736	1,987
7. *Remainder Unoccupied (including Roads)* ...	59,861	734	856	9,788	6,089

Corresponding figures for previous years may be obtained from the Statistical Registers of South Australia.

§ 6. Western Australia.

1. **Settlement in the Early Days.**—In the year 1827 Captain James Stirling, accompanied by Mr. Charles Fraser, the Colonial Botanist in New South Wales, made an examination of the country in the vicinity of the Swan River, with a view to the establishment of a settlement, and in consequence of the favourable report made by these gentlemen, the Home Government decided to organise a colonising expedition forthwith. On the 2nd June, 1829, the transport *Parmelia* arrived in Cockburn Sound, having on board Captain Stirling, who had been appointed Civil Superintendent of the Swan River settlement, and a number of officials and intending settlers. On the 17th June the expedition disembarked and encamped on the north bank of the Swan River, at the place now called Rous Head, and with the landing of these immigrants the settlement of Western Australia commences. The first settlers were offered large grants of land proportional to the amount of capital introduced, which comprised the value of all stock and implements of husbandry, at the rate of forty acres for every sum of £3, but they had to spend one shilling and sixpence per acre on improvements, before they could obtain the fee simple. The land granted was to be within three years cultivated, or otherwise improved, or reclaimed from its wild state, to a fair proportion of at least one-fourth, or the owners were liable to a payment of sixpence per acre into the public chest: and if still unimproved at the end of seven years the land reverted absolutely to the Crown. Grants were also made to capitalists at the rate of 200 acres for every labourer brought over at their expense, but any land so granted reverted to the Crown unless it was brought under cultivation, or otherwise improved, or reclaimed from its wild state within twenty-one years. Closely following the *Parmelia* a number of vessels arrived, increasing the number of settlers and introducing further supplies of live stock, until at the end of year 1830 nearly 1800 immigrants had arrived in the colony. No preparations had been made for the reception or provision of these settlers; many of them were persons who were quite unfitted for the hardships which had to be endured, and a general feeling of despondency and depression commenced to spread amongst the colonists. Numbers left, rather than face the difficulties inseparable from initial colonisation; those who remained, however, struggled on manfully, and in spite of great hardships and privation laid the foundation of the present colony.

2. **History of Land Regulations and Legislation.**—The original regulations under which grants were made to the first settlers were amended by others of a similar nature issued by the Imperial Government on the 20th July, 1830, which in turn were replaced in 1832, when free grants were abolished and land was sold at a minimum price of five shillings per acre. In 1837 the price of allotments in Perth, Fremantle, and Albany was fixed at a minimum of £5 an acre. New land regulations were issued by the Home Government in 1843, and these were amended and amplified in 1864. Further amendments were made in 1873 and 1882, and in 1887 the whole of the regulations were amended and consolidated. The colony was divided into six divisions, in all of which sale by auction was permitted, but otherwise the conditions of occupation differed in each division. In the year 1890 Constitutional Government was granted to the colony, and from time to time various alterations were made in the land regulations by the local Government, until in 1896 the Agricultural Lands Purchase Act was passed.

3. **Land Acts now in Force.**—The last-named Act as amended in 1897, 1898 and 1904 is still in force; it provides for the purchase of lands by the Government suitable for immediate settlement in comparatively small areas, and is referred to in greater detail below. In 1898 a Land Act was passed amending and consolidating previous regulations and legislation as to the sale, occupation, and management of Crown lands, and this Act has in turn been amended in 1899, 1900, 1902, 1904, 1905 and 1906. In 1894 the Agricultural Bank Act received assent; this Act authorised the establishment of a bank for the purpose of rendering financial assistance to settlers. It was amended in 1896, 1899, 1902 and 1904, and was finally consolidated and amended by the Agricultural Bank Act 1906.

4. **Administration of Land Acts.**—For the purposes of the administration of the Land Acts 1898 to 1906, the State is divided into six divisions as follows:—The South-West Division, the Kimberley Division, the North-West Division, the Central Division, the Eucla Division, and the Eastern Division. In addition to these divisions, the State is also divided into Land Districts for the purpose of conveniently dealing with the alienation of land, and by the Lands Act Amendment Act of 1906 the Governor is empowered to appoint District Land Boards, consisting of not less than three nor more than five persons, one at least of whom must be an officer of the Lands Department. The duties of the Board are to decide whether the conditions under which any land in the district is held have been complied with, and in the case of two or more applications in respect of the same land being received on the same day, to determine which of such applications is to be granted.

5. **Modes of Tenure under the Land Acts.**—Under the Land Acts 1898 to 1906 land may be held or acquired in the following manners:—(i.) Purchase by auction; (ii.) conditional purchase with residence; (iii.) conditional purchase without residence; (iv.) conditional purchase by direct payment; (v.) conditional purchase of blocks for vineyards, orchards, or gardens; (vi.) conditional purchase of grazing lands; (vii.) free homestead farms; (viii.) workingmen's blocks; (ix.) pastoral leases; (x.) permits and licenses to cut timber; (xi.) special leases; and xii.) licenses for quarrying.

(i.) *Purchase by Auction.* Town, suburban, and village lands throughout the colony, after being surveyed into lots and notified in the *Gazette* as open for sale, may be sold by public auction at an upset price to be determined by the Governor-in-Council. Any person may apply to the Minister to put up for sale by auction any lot already surveyed on depositing 10 per cent. of the upset price, which is refunded in the event of the applicant being outbid at auction. The purchaser must pay 10 per cent. on the fall of the hammer, unless he has already paid a sufficient deposit on application, and must pay the balance of the purchase money by four equal quarterly instalments, subject to alteration by regulations. In the case of suburban and village lands, the purchaser must enclose the land with a fence of the prescribed description within two years from the date of sale. On payment of the first instalment of the purchase-money a license is issued to the purchaser, and his license may be transferred or mortgaged.

(ii.) *Conditional Purchase with Residence.* Under this form of tenure any person over the age of sixteen years may select from a minimum area of 100 acres to a maximum of 1000 acres in any part of the State. The usual price of the land is ten shillings an acre, payable in twenty years by half-yearly instalments, or sooner, at the occupier's option. Applications must be accompanied by a deposit of a half or a quarter-year's rent, as the case may be; that is to say, if the application be made during the first quarter of the half-year, a half-year's rent is required; if in the second quarter, only a quarter-year's rent need be deposited. In the event of the application not being approved the deposit is refunded. Half the cost of survey must be paid by the selector in two instalments, the first with the application and the second within twelve months' time. The selector is required to take up his residence on his allotment within six months from the date of survey, and to reside thereon for at least six months during each of the first five years; the residence condition may, however, be performed on any rural land held by the selector within twenty miles. Residence by the wife, parent, or a child of over sixteen years of age, may also be accepted. Improvements must be effected equal in value to the amount of the purchase-money, and must be at the rate of one-fifth of the purchase-money every two years, but are not required to be more than £1 per acre in value should the price of the land exceed that amount. One-half of the land must be fenced within five years and the whole within ten years. Half the value of great and small stock-proof fencing is allowed towards the improvements required, and two-thirds of the value of a dog or rabbit-proof fence; but no allowance in respect to the fencing is made until after the fourth year of the term of the lease. A lease fee of ten shillings is payable with every application for a lease, at the expiration of which, or at any time after five years from the date of which, provided that all the conditions of residence and improvements have been complied with and the purchase-money paid, the lessee may obtain a Crown grant of the land on payment of the grant fee of thirty shillings.

(iii.) *Conditional Purchase without Residence.* If the selector does not wish to reside upon the land he may take up from 100 acres to 1000 acres, subject to the same conditions with regard to improvements, purchase-money, and survey, lease, and grant fees as in the case of residential purchases, with the exception that the total value of the improvements required is 50 per cent. over and above the amount of the purchase-money, but not more than thirty shillings per acre need be spent on improvements, although the price of the land may be over £1 per acre.

(iv.) *Conditional Purchase by Direct Payment.* Any unalienated Crown lands may be acquired by conditional purchase by direct payment. The price is not less than ten shillings an acre, payable within twelve months; the maximum area that may be selected by one person is 1000 acres, and the minimum is 100 acres. An amount equal to 10 per cent. of the purchase-money must be deposited with the application, on the approval of which by the Minister a license is issued for seven years, dating from the first day of the quarter next preceding the date of the approval of the application. The balance of the purchase-money must be paid within twelve months by four equal quarterly instalments, or sooner, at the option of the selector, but no Crown grant will be issued until the Minister is satisfied that the prescribed conditions have been fulfilled. The licensee must within three years fence in the whole of the land, and within seven years must expend upon the land in prescribed improvements at least ten shillings an acre in addition to the cost of fencing. Half the cost of survey must be paid by the purchaser as previously explained. The Crown grant may be obtained at any time, provided that all the conditions have been complied with and the purchase-money and fee have been paid.

(v.) *Conditional Purchase of Blocks for Vineyards, Orchards or Gardens.* Areas of from five to fifty acres may be selected for any of these purposes on the following terms:—The price of the land is not less than £1 an acre; a deposit of 10 per cent. of the purchase-money must be made upon application, and the balance must be paid within three years from the date of the approval of the application by equal half-yearly instalments. A lease is granted for three years, during which time the whole of the land must be fenced with a great and small stock-proof fence, and at least one-tenth of the area must be planted with vines or fruit trees, or cultivated *bonâ-fide* as a vegetable garden. A Crown grant will be issued as soon as all the conditions have been complied with and the purchase completed.

(vi.) *Conditional Purchase of Grazing Lands.* The Governor may declare any lands which, in the opinion of the Minister, are unsuitable for agriculture, but suitable for grazing purposes, and which are not within an agricultural area, as open for selection as grazing leases. The application must be accompanied by the usual deposit of rent, as explained above with reference to conditional purchase with residence, together with the first instalment of the survey fee and the lease fee of ten shillings. An inspection fee may be charged if the Minister so directs. The land is inspected and reported on by a surveyor, and the price is fixed by the Governor, but may not be less than three shillings and ninepence per acre, and must be paid half-yearly at the rate of one-twentieth of the total purchase money per annum. The maximum area allowed is 5000 acres, and the minimum 500 acres, but if the land applied for adjoins a holding of the applicant the minimum may be 300 acres. Within six months the lessee must take possession of his lease, and residence is required for six months of the first year and for nine months during each of the next four years. These conditions as to residence may be performed by an agent or servant of the lessee, and if the lessee be the owner of any rural lands within twenty miles, and reside thereon, such residence is sufficient. Expenditure on improvements to the extent of one-fifth of the purchase-money is required during every two years of the first ten years of the lease, and the whole of the land must be fenced within the first ten years. Half the value of a great and small stock-proof fence, and two-thirds of the value of a dog or rabbit-proof fence, may be allowed towards the value of the improvements required after the fourth year of the lease. At the expiration of the term of the lease, or at any time after five years from the date of the lease, a Crown grant will be issued, provided that all conditions have been complied with and the full purchase-money paid.

(vii.) *Free Homestead Farms.* Every person who is not already the holder of more than 100 acres of land within the State, and being the head of a family, or a male of sixteen years of age and upwards, may select an area of from ten to 160 acres as a free homestead farm, on lands declared open for such selection within the South-West, Central, or Eucla Divisions, not being within a goldfield. The application must be accompanied by a statutory declaration and a fee of twenty shillings; half the cost of survey must be paid in two instalments of thirty shillings each, the first instalment with the application and the second within twelve months' time. Upon approval of the application an occupation certificate for seven years is issued; the selector must take personal possession of the land within six months from the date of such certificate, and must reside thereon for at least six months in each of the first five years of the term, but residence on rural land held by the same person within twenty miles of the free homestead farm is sufficient compliance with the above residence condition. Residence of the holder's wife, parent, or child over sixteen years of age, may be accepted at the Minister's discretion. Four shillings per acre must be spent in the erection of a habitable house and other prescribed improvements during the first two years; a further six shillings per acre during the next three years; and an additional four shillings per acre during the last two years. Not more than £30 of the amount spent on a habitable house will be allowed towards the total amount of fourteen shillings per acre, required to be expended upon improvements. Half of the land must be fenced during the first five years, and the whole must be enclosed with a great and small stock-proof fence by the end of the term of seven years. Half the value of a sheep and cattle-proof exterior fence, and two thirds of the value of a rabbit or dog-proof exterior fence will be allowed towards the amount required to be spent upon improvements after the fourth year of the term. A Crown grant will be issued upon compliance with all the conditions and upon payment of a fee of thirty shillings, but not before the expiration of the term of seven years, unless the holder has completed twelve months' residence, has made all the required improvements, and pays the sum of five shillings per acre for the land.

(viii.) *Working Men's Blocks.* Any person not already holding land within the State is entitled to obtain a lease of lands which have been surveyed and thrown open for selection as working men's blocks. The maximum area that may be selected by one person is, if within any town or goldfield, half an acre, or five acres elsewhere. The price is not less than twenty shillings per acre, payable in ten years by half-yearly instalments. The application must be in the prescribed form and must be accompanied by the first instalment of the purchase-money and a lease fee of ten shillings. The selector must take personal possession within three months, and must reside upon the land for nine months in each of the first five years, but residence by the wife, parent, or child over sixteen years of age, may be accepted. Within three years the land must be fenced with a great and small stock-proof fence, and within five years an amount equal to double the purchase-money must be expended upon prescribed improvements, in addition to the cost of the exterior fencing. One-half the cost of any house may be allowed towards the improvements required. At the expiration of the lease, or at any time after five years from the date of the commencement of the lease, upon compliance with all conditions and upon payment of the full purchase-money and fee, a Crown grant will be issued. No person who has once held a working man's block is allowed to select another, except under very special circumstances.

(ix.) *Pastoral Leases.* Leases are granted for pastoral purposes throughout the State, but such leases give no right to the soil, or to the timber, except to such timber as may be required for domestic purposes or for the construction of improvements, and the lands leased may be reserved, sold, or otherwise disposed of by the Crown at any time during the currency of the term. All pastoral leases expire on the 31st December, 1928; the following are the conditions upon which such leases are issued in the various divisions of the State:—(*a*) In the South-west Division in blocks of not less than 3000 acres, at an annual rent of £1 for each 1000 acres or part thereof. (*b*) In the Central and North-west Divisions, in blocks of not less than 20,000 acres at an annual rent of ten shillings for each 1000 acres or part thereof. (*c*) In the Eucla Division, in blocks of not less than 20,000 acres at an annual rent of three shillings for each 1000 acres or part thereof. (*d*) In the Eastern Division, in blocks of not less than 20,000 acres at an annual rent of five shillings for each 1000 acres or part thereof. (*e*) In the Kimberley Division in blocks of not less than 50,000 acres when on a frontage, nor less than 20,000 acres when no part of the boundary is on a frontage, at an annual rent of ten shillings for each 1000 acres or part thereof. Any lessee in the Kimberley Division may obtain a reduction of one-half the rent due for the remaining years of his lease, who at any time during the term of his lease has, and for so long as he has in his possession on the land the subject of the lease, or of any other lease not separated by a greater distance than twenty-five miles, owned and worked by the lessee as one station, ten head of sheep or one head of large stock for each 1000 acres leased. Under the Amendment Act of 1906, which is not retrospective, it is provided that if any pastoral lease or group of leases worked as one station is not kept stocked, after the first two years from the commencement of the term, at the rate of at least ten head of sheep or one head of large stock for every 1000 acres comprised therein, such lease or leases are liable to forfeiture.

(x.) *Permits and Licenses to Cut Timber.* The alienation of forests and timber lands is now regulated by the Lands Act Amendment Acts of 1904 and 1906, under which the Governor is authorised to appoint an Inspector-General of Forests and an Advisory Board consisting of three persons, whose duty it is to advise the Minister upon all matters relating to forest conservation and timber lands. The Governor is authorised to declare any Crown Lands to be a State forest or timber reserve, and to grant to persons desirous of erecting saw-mills permits to cut timber in any State forest or timber reserves, or on any Crown land, upon the following conditions:—(*a*) That the right of cutting timber is granted over an area proportional to the horse-power of the mill proposed to be erected on the basis of the provision of ten years' cutting; (*b*) that the railway or tramway connecting such mill with any Government railway shall be located in such manner as will best serve the country requiring an outlet in that vicinity; (*c*) that the permit is liable to forfeiture in the event of the mill being closed for a period of one month without the consent of the Governor, or in the event of any breach of any condition or provision; (*d*) such other conditions as may be prescribed. Licenses may also be granted to hew and fell timber for piles, poles, or baulks, subject to the payment by the licensee of royalties proportional to the measurement of the timber hewn or felled. The amount of all fees or royalties is fixed by the Governor.

(xi.) *Special Leases.* On receiving an application in the prescribed form the Governor may grant leases of any Crown land for any area not exceeding (except in the cases of leases for guano or other manure, or for the collection or manufacture of salt) twenty-five acres, for a term not exceeding twenty-one years, at a yearly rental of not less than £2, for a variety of purposes, such as:—For obtaining guano, stone, or earth; for sites for inns, stores, bridges, factories, wharves, and jetties; for the working of mineral springs; for the collection and manufacture of salt; for works for supplying water, gas, or electricity; or for any other purpose approved by the Governor. The lessee must pay a deposit of one-half of the first year's rent, and must also pay for the cost of survey. In all cases where it is proposed to grant a lease for a longer period than ten years, notice of the application for such lease and of the purpose and term thereof must be published in four consecutive numbers of the *Gazette*.

(xii.) *Licenses for Quarrying.* Licenses are granted to any person to quarry and dig for any rock, soil, or other material, on any lands vested in the Crown, not being on a goldfield or in a mining district, for building purposes and to make bricks or any other commodity. The fee to be paid for such license is determined by the Governor, not being, however, less than five shillings per month for each man employed.

6. **General Provisions of the Land Acts.**—All applications must be lodged, with the prescribed deposit and fees, at the agency in which the land is situated.

(i.) *Maximum Area any One Person may Hold.* No person may acquire under homestead farm, conditional purchase, and grazing lease, collectively, or any two or more of them, either as lessee or transferee, more than 2000 acres of cultivable land (that is, land acquired as homestead farm and by conditional purchase), or an equivalent area of grazing land, or cultivable and grazing land mixed. Where a man has selected up to the maximum allowed, his wife may hold a further area of 1000 acres of cultivable land or its equivalent area of grazing or of cultivable and grazing land. Five acres of grazing land are deemed to be an equivalent of two acres of cultivable land, and all unclassified land disposed of prior to the 1st February, 1907, is deemed to be cultivable land until otherwise classified by the Lands Department. If the holder require the land to be classified he must pay the prescribed fee.

(ii.) *Joint Holders of Selections.* Two or more persons holding land in their joint names are each deemed to hold an area equal to half the area of the holding. Three persons holding in joint names are each deemed to be the holder of one-third of the area, and so on. The Minister may accept residence by one or more of the joint holders as compliance with the residence conditions by all.

(iii.) *Date from which Conditions Apply.* Where the land is surveyed at the time of selection the conditions of residence and improvements commence from the first of the quarter preceding the date of approval; but when the land is unsurveyed at the time of approval the conditions date from the date of survey, of which the selector is duly advised.

(iv.) *Transfers.* No transfer of a homestead farm, conditional purchase, or grazing lease is allowed, except in special cases, until after the expiration of two years from the commencement of the lease or occupation certificate, unless the full amount required to be expended during that period has already been spent on the land.

(v.) *Forfeiture.* Any holding may be forfeited for non-compliance with the conditions of improvements and residence notwithstanding that the rent has been paid on the due dates.

7. **Closer Settlement under the Agricultural Lands Purchase Acts, 1896 to 1904.**—Under these Acts the Colonial Treasurer, with the approval of the Governor, is authorised to expend from time to time sums not exceeding in the whole £200,000 on the repurchase of Crown lands near the railways, suitable for immediate cultivation.

(i.) *Acquisition of Land by the Government.* For the purpose of carrying out the provisions of the Acts, a Land Purchase Board, consisting of not more than five persons, appointed by the Governor, is constituted. The duties of this Board are to report on various matters in connection with the repurchase of any lands, such as the fair value of the land to the owner; the demand for land in the neighbourhood for agricultural settlement; and the suitability for agricultural settlement, and the distance from a railway of the land proposed to be acquired. If the report of the Board be favourable, the Minister, with the approval of the Governor, may make a contract for the acquisition of the land by surrender at the price fixed by the Board, or at any lesser price.

(ii.) *Sale of Repurchased Land.* All land repurchased may be improved, prior to disposing of it, and the cost of the improvements is added to the price to be paid for the land when sold. Reserves may be set aside for public purposes, roads, and town sites; and town and suburban lands may be disposed of in the same way as such lands are alienated under the provisions of the Land Acts 1898 to 1906. The remainder of the land is thrown open to selection. The maximum quantity held by one person must not exceed 1000 acres. No person under the age of eighteen years is eligible as a selector, nor is any person who is the beneficial owner of land exceeding 1000 acres in area held either in freehold or under any of the provisions of the Land Acts. If, however, the land at the time of its surrender was classified as second or third-class land, the maximum area may be increased to 3000 and 5000 acres of each class respectively, or to 4000 acres if the land is partly second and partly third-class. If land thrown open to selection is not applied for, it may be put up for sale by public auction.

(iii.) *Conditions of Sale to Selectors.* The selling price of any repurchased land is ascertained by adding a sum equal to one-tenth part of the price actually paid for the land, and for any improvements made upon it, and the total is the least price at which it may be selected. Applications must be in the prescribed form and must be accompanied by the first year's instalment of the purchase-money, at the rate of £7 12s. 10d. for each £100 of the selling price; on approval of the application, a lease for twenty years is issued at an annual rent, at the same rate at which the first year's instalment was paid. The lessee must, within two years, fence in at least one-fourth of his selection, and within five years the whole must be fenced, and at least one-tenth of the land must be cleared and cropped. Within ten years he must spend upon prescribed improvements an amount equal to the full purchase-money, which includes the cost of the exterior fencing. At the expiration of the lease, or at any time during the currency of the lease, if all conditions have been complied with and the full purchase-money paid, a Crown grant may be obtained. Loans may be granted under the provisions of the Agricultural Bank Acts to any selectors under the Agricultural Land Purchase Acts, who have fenced in the whole of their selection, and have cleared and cropped at least one-tenth of it.

8. **Loans to Settlers.**—Under the provisions of the Agricultural Bank Act 1906 settlers may be granted loans of sums from £25 to £500 for the purpose of clearing, fencing, ring-barking, draining, or water conservation. The amount is repayable in thirty years, interest only at the rate of 5 per cent. per annum being paid during the first five years, and the capital plus interest is payable in equal half-yearly instalments for the remaining twenty-five years. The maximum amount which can be advanced to any one person or firm is £500; of this amount the first £300 may be

advanced to the full value of the improvements proposed to be made, and the remaining £200 up to 50 per cent. of the value of additional improvements proposed to be made. The sum of £100 may be advanced for the purpose of purchasing breeding stock, and advances may also be made to pay off existing mortgages up to 75 per cent. of the value of the improvements made on the holding as prescribed by the Act. The bank does not advance money to pay off unregistered liabilities. Application must be made on the prescribed form, which must be accompanied by a fee equal to 1 per cent. of the amount applied for. Settlers requiring assistance should submit their applications as early as possible before the money is actually required, and they should also obtain their leases from the Lands Department to avoid delay in completing the security.

9. **Area of Land Alienated, in Process of Alienation, and Area held under Lease or License.**—The total area of the State of Western Australia is 624,588,800 acres; the following table shews the area alienated absolutely and conditionally, and the areas held under leases and licenses at the end of each year, from 1901 to 1905 inclusive, and on 30th June, 1906:—

WESTERN AUSTRALIA.—OCCUPATION OF LAND FROM 1901 TO 1906 INCLUSIVE.[1]

Particulars.	Area in Acres.					
	1901.	1902.	1903.	1904.	1905.	1905-6.
1. *Absolutely Alienated*	3,468,878	3,517,724	3,646,139	3,724,789	3,765,975	3,781,613
2. *In Process of Alienation—*						
Midland Railway Concessions	2,768,810	2,768,810	2,768,810	2,768,810	2,768,810	2,768,810
Free Homestead Farms ...	283,455	365,468	573,585	785.585	923,211	950,966
Conditional Purchases ...	1,349,554	1,550,530	2,008,288	2,504,094	3,071,939	3,282,024
Selections from the late W.A. Company	75,213	74,247	72,464	60,478	57,564	55,848
Selections under the Agricultural Lands Purchase Act ...	37,235	48,675	62,956	102,696	128,011	136,022
Special Occupation Leases and Licenses	8,867	7,057	5,860	4,284	3,484	5,090
Homestead or Grazing Leases	286,425	462,371	714,045	1,114,373	1,267,810	1,254,139
Poison Land Leases or Licenses	1,306,270	1,061,173	700,345	492,719	392,784	340,873
Immigrants' Grants	400	400	400	200	100	100
Village Allotments	6	7	7	7	14	24
Workingmen's Blocks ...	31	130	158	273	333	393
Total in Process of Alienation	6,116,266	6,338,868	6,901,918	7,833,519	8,614,060	8,794,289
3. *Leases and Licenses in Force—*						
(i.) *Issued by Lands Department*						
Pastoral Leases	96,508,549	111,165,639	134,687,972	138,876,509	144,822,903	151,582,656
Special Leases	448	531	716	848	3,482	3,505
Leases of Reserves	5,296	3,301	982	981	1,021	2,021
Selections in Goldfields ...	3,955	2,653	2,653	2,653	100	100
Timber Leases and Licenses	865,180	889,540	904,260	885,140	858,290	851,250
Residential Lots	550	626	686	781	877	884
(ii.) *Issued by Mines Department*						
Gold Mining Leases ...	—	—	30,173	32,362	32,273	34,748
Mineral Leases	71,949	67,309	33,083	33.434	26,443	27,519
Miners' Homestead Leases	—	—	17,503	21,610	24,203	25,057
Total under Leases and Licenses	97,455,927	112,129,599	135,678,028	139,854,318	145,769,592	152,527,740
4. *Area neither Alienated, in Process of Alienation, nor Leased*	517,547,729	502,602,609	478,362,715	473,176,174	466,439,173	459,485,158

Total Area of State—624,588,800 Acres.

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[1] Figures are now given as up to the 30th June, instead of as up to 31st December. Figures for previous years may be obtained from the Statistical Registers of Western Australia.

10. **Areas Acquired and Disposed of for Purposes of Closer Settlement, 1901 to 1906.**—The transactions conducted under the provisions of the Agricultural Lands Purchase Acts are shewn for each year, since 1901, in the subjoined table.

WESTERN AUSTRALIA.—TRANSACTIONS UNDER THE AGRICULTURAL LANDS PURCHASE ACTS DURING THE YEARS 1901 TO 1906 INCLUSIVE.[1]

Particulars.		1901.	1902.	1903.	1904.	1905-6.
Total area of estates acquired	Acres	46,624	55,439	72,372	131,283	165,945
Total amount of purchase-money ...	£	52,764	60,514	73,395	82,580	100,811
Set aside for roads, reserves, etc. ...	Acres	1,459	1,712	2,665	4,734	9,009
Area originally available for selection ...	"	45,165	53,727	69.707	126,549	156,936
Area selected during the year	"	4,295	11,540	16,232	42,305	31,687
Total area occupied to date	"	37,235	48,616	65,368	105,106	129,024
Balance of area available for selection ...	"	7,929	5,111	4,339	21,443	27,912
Total revenue received to date	£	14,451	23,538	29,815	37.371	47,021

[1] The figures are now given as up to the 30th June instead of as up to the 31st December; 1906 figures are, therefore, omitted. Corresponding figures for previous years may be obtained from the Statistical Registers of Western Australia.

1. **Classification of Holdings according to Size, 1901 to 1906.**—The subjoined table shews the number of holdings of lands alienated absolutely, and in process of alienation, from which returns were received for the different seasons since the season 1900-1901, classified according to size.

WESTERN AUSTRALIA.—NUMBER OF HOLDINGS OF ALIENATED LANDS, AND LANDS IN PROCESS OF ALIENATION, FROM WHICH RETURNS WERE RECEIVED FOR THE SEASONS FROM 1900-1901 TO 1905-6, ARRANGED IN AREA SERIES.

Area Series.	1900-1.	1901-2.	1902-3.	1903-4	1904-5.	1905-6.
Acres.						
1 to 5	789	955	1,004	1,064	1,193	1,236
6 " 15	544	429	476	578	669	752
16 " 30	245	238	240	336	367	375
31 " 50	150	181	171	197	215	230
51 " 100	198	490	453	502	523	518
101 " 200	1,027	811	872	904	925	1,000
201 " 300	607	582	575	593	620	642
301 " 500	668	719	775	829	886	937
501 " 750	475	484	520	604	648	743
751 " 1,000	242	297	312	389	537	568
1,001 " 2,000	412	423	486	611	737	830
2,001 " 3,000	102	104	128	166	216	249
3,001 " 5,000	93	86	99	111	164	184
5,001 " 7,500	51	45	54	60	78	86
7,501 " 10,000	22	29	33	26	33	48
10,001 " 15,000	26	32	28	39	42	35
15,001 " 20,000	12	7	13	12	10	14
20,001 " 30,000	18	9	13	9	16	12
30,001 " 50,000	18[1]	10	12	10	11	11
50,001 and upwards ...	—	9	4	4	10	5
Total	5,699	5,940	6,268	7,044	7,900	8,475

[1] Number of holdings of 30,001 acres and upwards.

§ 7. Tasmania.

1. **Settlement in Early Days.**—The early settlement of Tasmania was carried out under the regulations framed for the disposal of Crown lands in New South Wales, of which colony it was, at the outset, a part, and after its constitution under a separate administration in 1825 the regulations issued from the Colonial Office for the settlement of Crown lands in the mother colony were made applicable to Tasmania. In 1828 the first land sales in the island took place, but so low were the prices obtained that 70,000 acres enriched the Treasury by only £20,000. In the month of January, 1831, the system of issuing free grants of land was abolished.

2. **History of Land Legislation.**—In 1855 responsible government was granted to the island colony, and from this time dates the policy under which later settlemen has

taken place. The Waste Lands Act 1858 introduced the principle of free selection before survey, but owing to the small area available for selection, and the fact that much of the land was heavily timbered, the practical value of this measure was comparatively small. From 1860 to 1870 no less than thirteen Land Acts were passed, and in the latter year a new measure, the Waste Lands Act 1870, embodying and consolidating many of the salient features of previous enactments, was carried. One of the most important features of this Act was the extension of a principle, introduced by a former Act in 1863 and embodied in the legislation now in force, devoting a portion of the purchase-money derived from land sales to the construction of roads and bridges. The Act of 1870 also gave power to the Governor to reserve such land as he might deem necessary for public purposes, and the lands not so reserved were divided into (*a*) town, (*b*) agricultural, and (*c*) pastoral lands. The first class comprised all lands within the towns and villages; the second class included lands which might from time to time be proclaimed as suitable for agricultural purposes; the third class comprised lands which were better adapted for grazing than tillage. The conditions attached to conditional purchases were that the selector, his tenant or servant, should within one year of the date of selection, reside upon the land until the full purchase-money was paid. The upset price for agricultural lands was £1 an acre, that for pastoral lands being a sum equivalent to twelve years' rental, but not in any case more than five shillings an acre. If the selection were purchased for cash a deposit of one-fifth of the purchase-money had to be made and the remainder had to be paid within a month; if purchased upon credit the purchaser had to pay an extra sum of six shillings and eightpence an acre. Numerous amendments to the Act of 1870 were passed, until, in 1890, a measure was carried consolidating the various Acts then in force; the Act of 1890 was itself amended in 1893, 1895, and in 1900. The law relating to land tenure and settlement is now consolidated in the Crown Lands Acts 1903 and 1905, and in the Closer Settlement Act of 1906.

3. **Classification of Lands.**—The Crown lands of Tasmania are divided into two classes—(1) town lands and (2) rural lands. The former comprise lands within the boundaries of any city, town, or town reserve, and within a distance of five miles of any city. Rural lands comprise (*a*) first-class land, (*b*) second-class land, and (*c*) third-class land. Town lands can only be purchased by auction, or if, after having been offered by auction they are not sold, by private contract within one year of the auction sale.

4. **Acquisition of Land for Agricultural Purposes.**—Rural lands may be purchased at auction, or may be selected for purchase privately, either by free selection or by selection of a homestead area.

(i.) *Free Selection.* Any person of eighteen years of age and upwards may select an area not exceeding 200 acres of first-class land, 250 acres of second-class land, or 500 acres of third-class land. Application must be made in a prescribed form obtainable from the various post and police offices throughout the State, and from the Crown Lands Office, Hobart, and Lands Branch Office, Launceston. Intending selectors can obtain ready assistance in making their choice of lands from the District Surveyors or from the officers of the Crown Lands Office. The price of first-class land is not less than £1 an acre, with one-third of that price added as a premium for credit, which extends over a period of fourteen years. For second-class land ten shillings an acre is the minimum price, with one-third added for credit, the period of which is fourteen years. For third-class land the price is not less than five shillings an acre, with one-third added for credit for fourteen years.

(ii.) *Selection of Homestead Areas.* Any person of the age of eighteen years or over who has not previously purchased land in Tasmania may make a selection of a homestead area of first-class land not exceeding fifty acres, at the price of £1 an acre, with one-third added for credit. The selector of a homestead area must pay a cash deposit of twopence an acre at the time of purchase, but need pay nothing further towards the purchase-money until the fourth year, when the payments for that year and for the fifth year are at the rate of tenpence an acre, and for the remaining fourteen years, during which the credit extends, the annual payment is at the rate of 2s. an acre.

(iii.) *Selection in Mining Areas.* A "Mining Area," under the Crown Lands Act, comprises land in the vicinity of a mining field, and which is specially proclaimed a mining area. The land so proclaimed may be selected as first-class agricultural land, not exceeding 100 acres, on the terms provided for the purchase of these lands; but if the land is within one mile of a town the maximum area is twenty acres and the minimum ten acres. Second-class lands within a mining area can be sold at auction, but no lands within a mining area can be sold as third-class. All lands purchased within a mining area are open to any person to search or mine for minerals, gold, or other metals; but before any such person can commence searching or mining he must obtain permission in writing from the Secretary for Mines or the nearest Commissioner of Mines.

(iv.) *Survey Fees.* In order to make the payments during the first year of purchase as light as possible the Lands Department advances to the selector of any first-class land four-fifths of the amount of fee necessary for the survey of the land. The balance is payable in the next succeeding four years, together with interest at the rate of two shillings and sixpence in the pound. For lands purchased by auction, and for second and third-class lands, the survey fee must be paid in full. The amount of this fee, for first-class lands, ranges from £4 10s. to £15 15s. for selections of from 25 to 200 acres respectively; for second-class lands the fee ranges from £6 5s. to £15 10s. for selections of from 30 to 250 acres; and for third-class lands it ranges from £11 to £20 for selections of from 60 to 500 acres respectively.

(v.) *General Conditions.* Upon all first-class lands selected or purchased under the Acts now in force habitual residence is necessary for five years, commencing within one year of the date of purchase, and must be continuous; but on land within a mining area the necessary period of residence is reduced to three years. In both cases this may be complied with by the selector himself or some member of his family, or some one employed by him or on his behalf. If purchased on credit all lands must be improved to the value of a sum at least equal to the sale price of the land. If purchased for cash, upon first-class lands the selector must expend a sum of not less than two shillings and sixpence an acre of the whole area in substantial improvements every year for the first eight years. By paying off before the expiration of the period of credit all selectors obtain a rebate of the added premium in proportion to the unexpired period of credit. In the case of second-class land purchased for cash, land must be improved to the value of at least one shilling an acre per annum for the first five years before the selector can pay up and obtain his deed of grant; and in the case of third-class lands the selector must expend on substantial improvements a sum amounting at least to sixpence per acre per annum during the first five years before the balance of the purchase-money can be paid and the deed of grant issued. Improvements on all lands must be of a substantial nature, and include dams, wells, cultivation, fences, clearing or draining of land, the erection of a dwelling-house or farm or other buildings upon and permanently attached to the soil of such land.

5. **Grazing Leases.**—Grazing leases of unoccupied country may be offered at auction, but such runs are liable at any time to be sold or occupied by virtue of a license for other than pastoral purposes, and to be otherwise alienated and dealt with. The rent is fixed by the Commissioner, and the run is put up for auction, the highest bidder receiving a lease to occupy the same for fourteen years, which may be transferred by the lessee with consent of the Commissioner, and on payment of a fee of one shilling in the pound on the annual rental. The rent is payable half-yearly in advance, and the lease is determinable, should the rent not be paid within one month of becoming due. In the event of the land being required for sale or for any public purpose, six months' notice must be given to the lessee, who becomes entitled to receive from the Crown compensation for the value of all permanent improvements he may have made during the currency of his lease.

6. **Leases for Miscellaneous Purposes.**—The Governor-in-Council may grant leases for a period not exceeding fourteen years of any land bordering upon a navigable river, or on the sea, if required for the purpose of constructing wharves, docks, jetties, or any other

works of public utility. For whatever purpose the land is leased, the lease may be determined in case of non-completion of the works. Leases may also be granted, on similar conditions and terms, for the purpose of constructing watercourses, or of erecting a manufactory, mill, or such other work.

7. **Occupation Licenses.**—Occupation licenses may be issued by the Commissioner for a period not exceeding twelve months, to any person of the age of twenty-one or over, upon payment of a fee of five shillings. The license must describe the position and area of the land; no person can hold more than one such license at any time. Any person holding an occupation license is entitled to occupy, during the current year, the surface of any Crown land within any mining area not exceeding one-quarter of an acre. An occupation license is not transferable, and the holder thereof is not entitled to any compensation in respect of any improvements effected on the land, should the same be resumed by the Crown. The license is terminable at any time by three months' notice.

Residence licenses are granted on similar terms upon payment of a fee of ten shillings, and any person holding a residence license is entitled to occupy as a domicile, during the current year, the surface of the land described, which cannot exceed one-quarter of an acre in extent, within any town situate within a mining area.

Business licenses are also granted on similar conditions upon payment of a fee of twenty shillings, and entitle the holder to occupy, during the current year, the surface of any Crown land situate within any mining area not exceeding one-quarter of an acre, not being within a town. Residence and business licenses may be transferred by endorsement to any person eligible.

8. **Opening up of New Districts to Settlement.**—It is provided by the Lands Act of 1903 that, as soon as 500 acres of first-class, second-class, or third-class land are taken up in one locality, and in not less than five lots, the Governor shall raise a sum equal to ten shillings, five shillings, or two and sixpence, in the case of each class respectively, for every acre so taken up, by the issue and sale of debenture stock. The money so raised is to be spent in the survey and construction of roads, bridges, or drains, in the vicinity of the lands taken up. A similar provision is made with respect to the sale of lands within any town, not being within a mining area, of a value of not less than £250.

9. **Closer Settlement.**—The Closer Settlement Act of 1906 introduced a new principle into the land legislation of Tasmania. Under this Act power is given to the Minister for Lands, on the recommendation of the Closer Settlement Board, to purchase by agreement private land in any part of Tasmania for the purpose of closer settlement, and also to deal with and dispose of any unoccupied Crown land for the same purpose.

(i.) *Lease of Allotments.* Lands so bought under the Act are subdivided into farm allotments of a suitable size—not exceeding £1500 in value—and are disposed of by way of lease for ninety-nine years. The capital value of each allotment is fixed by the Closer Settlements Board, and the rental is determined by the Board at a rate not exceeding 5 per cent. per annum on the capital value of the land. In the case of the Cheshunt Estate, which has recently been subdivided for disposal under the Act, the rent was fixed at the rate of 4 per cent. on the capital value. Although the allotments are in the first place leased, any lessee, after the expiration of ten years of the term of his lease, may acquire and purchase the land leased to him, provided that he does not then hold land (exclusive of the land leased under the Act) of a value exceeding £1500, and that he has duly complied with the terms and conditions imposed by the Act, regulations, and his lease. At the expiration of five years from the date of lease, a lessee may dispose of his interest to any eligible person, the consent of the Board being first obtained.

(ii.) *Qualifications of Lessees.* Persons who apply for land under the provisions of the above Act must not be less than eighteen years of age, and those applicants who are landless have preference over those who are not. A person is deemed to be landless, if, at the time of making his application, he does not hold, under any tenure, such area of land as is, in the opinion of the Board, sufficient for the maintenance of himself and his family (if any). In the case of husband and wife, if either of them is not landless, neither of them are deemed to be landless. Only one allotment is granted to one person.

(iii.) *Advances to Settlers.* Under the Act provision is also made for advances to lessees, in aid of the cost of fencing the allotments and building dwelling-houses thereon; the total advance to any one lessee must not exceed one-fifth of the capital value of such lessee's allotment, and must not exceed pound for pound the sum expended by him in fencing and building. Such advances must be repaid, together with interest at 5 per cent., in equal half-yearly instalments.

10. **Areas Alienated, in Process of Alienation, Area Occupied under Lease or License and Area Unoccupied.**—The total area of the State of Tasmania is 16,777,600 acres, of which 4,768,701 acres had been alienated absolutely, 710,837 acres were in process of alienation, and 1,344,320 acres were held under lease or license, leaving 9,954,142 acres unoccupied.

TASMANIA.—AREA ALIENATED ABSOLUTELY, IN PROCESS OF ALIENATION, AND AREA OCCUPIED UNDER LEASE OR LICENSE, 1901 TO 1906.

Particulars.	Area in Acres.					
	1901.	1902.	1903.	1904.	1905.	1906.
1. *Area Alienated Absolutely* ...	4,893,961	4,955,550	5,040,413	5,168,821	5,398,953	4,768,701
2. *Area in Process of Alienation*...						710,837
3. *Area held under Lease or License*—						
Islands	149,165	110,135	88,590	121,850	89,003	1,208,442
Ordinary Leased Land ...	1,280,688	1,292,959	1,366,063	1,133,152	1,082,851	
Land Leased for Timber ...	40,768	68,109	82,335	90,300	87,932	86,817
Gold Mining Leases ...	3,394	3,024	2,505	2,268	2,087	1,836
Other Mining Leases ...	46,968	44,668	42,444	41,370	41,510	47,225
4. *Total Area Occupied*	6,414,944	6,474,445	6,622,350	6,557,761	6,642,336	6,823,858
5. *Area Unoccupied*	10,363,126	10,303,155	10,155,250	10,219,839	10,135,264	9,953,742

Total Area of State—16,777,600 Acres.

11. **Principal Land Transactions, 1901 to 1906.**—The subjoined statement shews the principal land transactions during each year, from 1901 to 1906, inclusive.

TASMANIA.—PRINCIPAL LAND TRANSACTIONS DURING EACH YEAR, 1901 TO 1906.

Particulars.		1901.	1902.	1903.	1904.	1905.	1906.[1]
Area of country lands sold	Acres	62,073	64,474	87,073	132,699	168,750	87,643
Area of town and suburban lots sold ...	Acres	636	663	1,577	1,225	1,384	1,367
Area leased for pastoral purposes	Acres	285,160	182,339	177,347	124,020	135,791	78,937
Total receipts from sales, leases and licenses	£	57,303	66,140	73,086	57,406	61,248	37,114
Applications for selections and purchases...	No.	1,946	2,679	2,973	4,200	3,129	1,344
Grant deeds issued	No.	680	783	627	540	466	278

[1] For six months ended the 30th June, 1906.

Corresponding figures for previous years will be found in the Statistical Registers of Tasmania.

§ 8. The Progress of Land Settlement, 1897 to 1906.

1. **Recent Progress.**—The progress of settlement and the growth of land alienation in the States of the Commonwealth under recent legislation is seen in the subjoined statement which shews concisely the condition of the public estate in each State and in the Commonwealth at the end of each year from 1897 to 1906, inclusive. The effect of the land laws during that period has been generally to diminish the number of large holdings, at the same

time decreasing the area held under lease, while both the area alienated and the area in process of alienation have increased. As leases of large areas fall in or are otherwise terminated they are in many cases not renewed, but the land leased is cut up for the purpose of settlement under systems of deferred payment; the State Governments, also, have in many cases acquired by repurchase considerable areas under the provisions of the various Closer Settlement Acts. Further, greater facilities have been granted to the working classes to acquire possession of the soil, and special inducements have been offered to *bonâ fide* settlers by the introduction of new forms of tenure on easy terms and conditions.

TOTAL AREAS ALIENATED, IN PROCESS OF ALIENATION, HELD UNDER LEASE OR LICENSE, AND UNOCCUPIED, IN EACH STATE AND IN THE COMMONWEALTH AT THE END OF EACH YEAR FROM 1897 TO 1906, INCLUSIVE, EXPRESSED ABSOLUTELY AND AS PERCENTAGES OF AREA OF ENTIRE STATE.

NEW SOUTH WALES.—AREA 198,638,080 ACRES.

Year.	Alienated.		In Process of Alienation.		Held under Lease or License.		Unoccupied.	
	Area in Acres.	Per Cent.	Area in Acres.	Per Cent.	Area in Acres.	Per Cent.	Area in Acres.	Per Cent.
1897	24,853,074	12.51	20,886,016	10.51	124,184,284	62.52	28,714,706	14.46
1898	25,081,572	12.63	21,307,018	10.73	127,609,598	64.24	24,639,892	12.40
1899	25,374,603	12.77	21,481,974	10.82	128,034,958	64.46	23,746,545	11.95
1900	25,856,698	13.02	21,546,284	10.85	126,085,148	63.47	25,149,950	12.66
1901	26,443,554	13.32	21,595,688	10.87	127,057,312	63.96	23,541,526	11.85
1902	27,658,901	13.93	21,042,993	10.59	131,781,381	66.34	18,154,805	9.14
1903	28,765,090	14.48	20,558,609	10.35	128,461,971	64.67	20,852,410	10.50
1904	29,968,317	15.09	19,296,487	9.71	124,027,009	62.44	25,346,267	12.76
1905	30,721,430[1]	15.47	18,797,421[1]	9.46	124,027,009[2]	62.44	25,092,220	12.68
1906[3]	32,486,086	16.36	17,484,249	8.80	124,237,031	62.54	24,430,714	12.30

1. To 30th June, 1905. 2. To 31st December, 1904. 3. To 30th June, 1906.

VICTORIA.—AREA 56,245,760 ACRES.

1897	18,194,656	32.35	4,929,962	8.76	19,857,682	35.31	13,263,460	23.58
1898	18,500,353	32.89	4,675,268	8.31	16,820,291	29.91	16,249,848	28.89
1899	19,198,794	34.13	4,053,769	7.21	19,195,896	34.13	13,797,301	24.53
1900	19,689,359	35.01	3,679,436	6.54	17,324,015	30.80	15,552,950	27.65
1901	20,095,245	35.73	3,675,274	6.53	17,161,359	30.51	15,313,882	27.23
1902	20,618,981	36.66	3,439,200	6.12	17,244,278	30.66	14,943,301	26.56
1903	21,129,061	37.57	3,397,194	6.04	9,516,372	16.92	22,203,133	39.47
1904	21,713,071	38.61	4,084,241	7.26	13,747,762	24.44	16,700,686	29.69
1905	22,620,410	40.22	3,726,392	6.62	17,892,479	31.81	12,006,479	21.35
1906	22,964,929	40.83	3,871,200	6.88	16,637,147	29.58	12,772,484	22.71

QUEENSLAND.—AREA 429,120,000 ACRES.

1897	12,959,694	3.02	1,854,399	0.43	*294,149,566	68.55	120,156,341	28.00
1898	13,043,806	3.04	2,033,651	0.47	*285,923,131	66.63	128,119,412	29.86
1899	13,164,767	3.07	2,476,875	0.58	280,801,539	65.43	132,676,819	30.92
1900	13,323,524	3.10	2,585,996	0.60	281,231,821	65.54	131,978,659	30.76
1901	13,533,468	3.15	2,791,664	0.65	279,986,645	65.25	132,808,223	30.95
1902	13,663,446	3.18	3,160,909	0.74	289,495,477	67.46	122,800,168	28.62
1903	13,770,725	3.21	3,220,402	0.75	277,569,396	64.68	134,559,477	31.36
1904	14,031,886	3.27	3,165,737	0.74	236,217,909	55.05	175,704,468	40.94
1905	14,252,664	3.32	3,407,210	0.79	240,152,615	55.97	171,307,511	39.92
1906	14,585,560	3.40	3,737,083	0.87	247,059,213	57.57	163,738,144	38.16

* The returns for 1897 and 1898 give only the areas occupied for pastoral purposes; the figures here given comprise, in addition, an area of 48,232,179 acres held for purposes other than pastoral at the end of 1899.

Year.	Alienated.		In Process of Alienation.		Held under Lease or License.		Unoccupied.	
	Area in Acres.	Per Cent.	Area in Acres.	Per Cent.	Area in Acres.	Per Cent.	Area in Acres.	Per Cent.
SOUTH AUSTRALIA.—AREA 243,244,800 ACRES.								
1897	7,329,210	3.01	705,593	0.29	120,207,539	49.42	115,002,458	47.28
1898	7,374,599	3.03	680,470	0.28	76,810,409	31.58	158,379,322	65.11
1899	7,412,425	3.05	644,465	0.26	79,512,996	32.69	155,674,914	64.00
1900	7,466,358	3.07	607,461	0.25	84,274,133	34.65	150,896,853	62.03
1901	7,535,123	3.10	553,774	0.23	85,577,155	35.18	149,578,748	61.49
1902	7,655,204	3.15	451,232	0.19	89,252,604	36.69	145,885,760	59.97
1903	7,799,729	3.21	344,258	0.14	90,330,042	37.13	144,770,771	59.52
1904	8,020,908	3.30	310,589	0.13	92,422,105	37.99	142,491,198	58.58
1905	8,114,124	3.34	455,381	0.19	94,147,909	38.70	140,527,386	57.77
1906	8,187,621	3.37	759,337	0.31	94,969,554	39.04	139,328,288	57.28
NORTHERN TERRITORY.—AREA 335,116,800 ACRES.								
1897	473,140	0.14	Leases with covenant to purchase, included in area held under lease or license.	...	100,847,817	30.09	233,795,843	69.77
1898	473,146	0.14		...	89,040,576	26.57	245,603,078	73.29
1899	473,195	0.14		...	183,687,605	54.81	150,956,000	45.05
1900	473,195	0.14		...	186,749,480	55.73	147,894,125	44.13
1901	473,278	0.14		...	112,654,288	33.62	221,989,234	66.24
1902	473,278	0.14		...	113,865,968	33.98	220,777,554	65.88
1903	473,278	0.14		...	104,638,788	31.23	230,004,734	68.63
1904	473,278	0.14		...	104,670,948	31.23	229,972,574	68.63
1905	473,279	0.14		...	103,280,346	30.82	231,363,175	69.04
1906	473,280	0.14		...	109,726,087	32.74	224,917,433	67.12
WESTERN AUSTRALIA.—AREA 624,588,800 ACRES.								
1897	6,230,345	1.00	2,616,349	0.42	88,186,489	14.12	527,555,617	84.46
1898	3,382,475	0.54	2,909,946	0.47	91,100,510	14.58	527,195,869	84.41
1899	3,413,529	0.55	3,065,420	0.49	90,314,932	14.46	527,794,919	84.50
1900	3,462,490	0.55	3,156,798	0.51	87,375,981	13.99	530,593,531	84.95
1901	3,468,878	0.56	6,116,266	0.98	97,455,927	15.60	517,547,729	82.86
1902	3,517,724	0.56	6,338,868	1.02	112,129,599	17.95	502,602,609	80.47
1903	3,646,139	0.58	6,901,918	1.11	135,678,028	21.72	478,362,715	76.59
1904	3,724,789	0.60	7,833,519	1.25	139,854,318	22.39	473,176,174	75.76
1905	3,765,975	0.60	8,614,060	1.38	145,769,592	23.34	466,439,173	74.68
1906[1]	3,781,613	0.60	8,794,289	1.41	152,527,740	24.42	459,485,158	73.57
TASMANIA.—AREA 16,777,600 ACRES.								
1897	4,768,901	28.42	Included in area alienated.	...	891,244	5.31	11,117,455	66.27
1898	4,777,640	28.48		...	998,785	5.92	11,006,175	65.60
1899	4,801,266	28.62		...	1,040,701	6.20	10,935,633	65.18
1900	4,834,944	28.82		...	1,267,185	7.55	10,675,471	63.63
1901	4,893,961	29.17		...	1,520,983	9.07	10,362,656	61.76
1902	4,955,550	29.54		...	1,518,895	9.05	10,303,155	61.41
1903	5,040,413	30.04		...	1,581,937	9.43	10,155,250	60.53
1904	5,168,821	30.81		...	1,388,940	8.28	10,219,839	60.91
1905	5,338,953	31.82		...	1,303,383	7.77	10,135,264	60.41
1906	4,768,701	28.42	710,837	4.24	1,344,320	8.01	9,953,742	59.33
THE COMMONWEALTH.—AREA 1,903,731,840 ACRES.								
1897	74,809,020	3.93	30,992,319	1.63	748,324,621	39.30	1,049,605,880	55.14
1898	72,633,591	3.82	31,606,353	1.66	688,298,300	36.15	1,111,198,596	58.37
1899	73,838,579	3.88	31,722,503	1.67	782,588,627	41.10	1,015,582,131	53.35
1900	75,106,563	3.94	31,575,975	1.66	784,307,763	41.20	1,012,741,539	53.20
1901	76,443,507	4.01	34,732,666	1.83	721,413,669	37.89	1,071,141,998	56.27
1902	78,543,084	4.12	34,433,202	1.81	755,288,202	39.67	1,035,467,352	54.40
1903	80,624,435	4.21	34,422,381	1.81	747,776,534	39.28	1,040,908,490	54.70
1904	83,101,070	4.37	34,690,573	1.82	712,328,991	37.41	1,073,611,206	56.40
1905	85,286,835	4.48	35,000,464	1.84	726,573,333	38.16	1,056,871,208	55.52
1906	87,247,790	4.58	35,356,995	1.86	746,501,092	39.21	1,034,625,963	54.35

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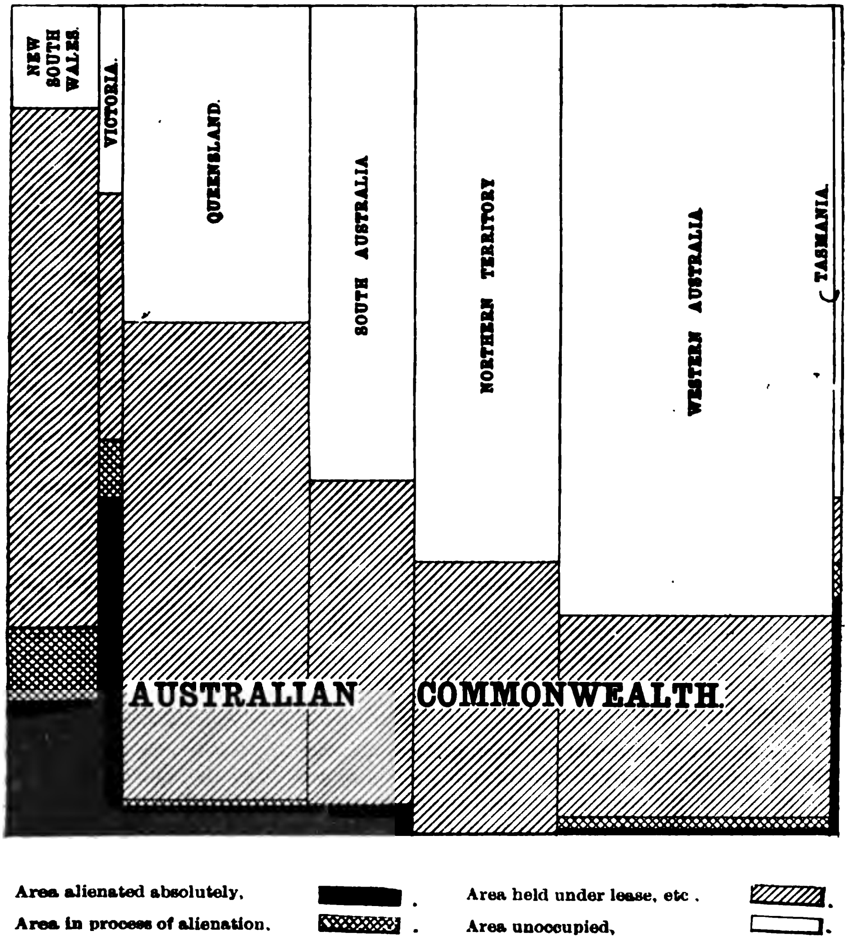
[1] To 30th June, 1906.

2. **Diagram shewing Condition of Public Estate.**—The following diagram shews the condition of the public estate in the Commonwealth at the end of the year 1906. The square itself represents the total area of the Commonwealth, while the relative areas of individual States are shewn by the vertical rectangles. The areas alienated absolutely, in process of alienation under systems of deferred payments, and the areas held under leases or licenses, are designated by the differently-shaded areas as described in the reference given below the diagram, while the areas unoccupied are left unshaded:—



SECTION VII.

PASTORAL PRODUCTION.

§ 1. Initiation and Growth of Pastoral Industry.

1. **Early Statistics.**—The live stock which Captain Phillip brought with him when establishing the first settlement in Australia in 1788 is stated to have comprised seven horses, six cattle, twenty-nine sheep, twelve pigs, and a few goats. Later in the same year, in a letter from Captain Phillip to Lord Sydney, then Secretary of State for the Colonies, an enclosure signed by "Andrew Miller, Commissary," sets forth in detail the numbers of each kind of live stock in the colony on 1st May, 1788. A summary of the particulars supplied is as follows:—Horses, 7; cattle, 7; sheep, 29; pigs, 74; rabbits, 5; turkeys, 18; geese, 29; ducks, 35; fowls, 209. In view of the depredation since caused by rabbits their inclusion in this return as part of the live stock of the Commonwealth is of interest.

2. **Subsequent Development.**—During the years immediately succeeding the first settlement the growth of the number of live stock was slow, and notwithstanding importations from India and the Cape of Good Hope the total of the flocks and herds of Australia amounted in 1800 to only 203 horses, 1044 cattle, 6124 sheep, and 4017 pigs. During the next fifty years, however, the pastoral industry made rapid strides, and at the end thereof (1850) the totals reached were 159,951 horses, 1,894,834 cattle, 15,993,954 sheep, and 114,000 pigs.

The statistical records of live stock in Australia prior to the year 1860 are somewhat defective, but from that year onwards fairly complete particulars are available in most of the States. At the present time statistics of live stock are collected annually in all the States, principally through the agency of the police, but in the years 1885 to 1888 inclusive, and 1893 to 1895 inclusive, no such particulars were collected in South Australia, and similar gaps occur in the Victorian records for the periods 1895 to 1899 inclusive, and 1901 to 1903. In order to obtain totals for the Commonwealth for these years the missing numbers have been supplied by interpolation. The results so obtained probably differ but slightly from the actual numbers for the respective years.

3. **Increase in Numbers.**—Particulars concerning the numbers of each kind of live stock in the Commonwealth from 1860 to 1900 at quinquennial intervals, and thence onwards in single years, are given in the following table, and are shewn continuously in the graph as given hereinafter:—

During the forty-six years covered by the table on the next page the live stock of the Commonwealth increased considerably, horses by 309 per cent., cattle 136 per cent., sheep 316 per cent., and pigs 132 per cent. The annual increases which these aggregates represent are as follows:—Horses, 3.11 per cent. per annum; cattle, 1.89 per cent.; sheep, 3.15 per cent.; and pigs, 1.84 per cent.

COMMONWEALTH LIVE STOCK, 1860 TO 1906.

Year.	Horses.	Cattle.	Sheep.	Pigs.
1860	431,525	3,957,915	20,135,286	351,096
1865	566,574	3,724,813	29,539,928	345,704
1870	716,772	4,276,326	41,593,612	543,388
1875	835,393	6,389,610	53,124,209	549,808
1880	1,068,402	7,527,142	62,186,702	815,776
1885	1,143,064	7,397,947	67,491,976	748,908
1890	1,521,588	10,299,913	97,881,221	891,138
1895	1,680,419	11,767,488	90,689,727	822,750
1900	1,609,654	8,640,225	70,602,995	950,349
1901	1,620,420	8,493,678	72,040,211	931,309
1902	1,524,601	7,067,242	53,668,347	777,289
1903	1,546,054	7,254,258	56,932,705	837,368
1904	1,595,256	7,849,520	65,823,918	1,062,703
1905	1,673,805	8,525,025	74,403,704	1,014,853
1906	1,765,186	9,349,409	83,687,655	813,569

4. **Fluctuations.**—These increases, however, have not been continuous, marked fluctuations having taken place during the period, mainly on account of the droughts which have from time to time left their impress on the pastoral history of Australia. These were in evidence in 1869, 1877, 1884, 1895 and subsequent years, and in 1902. The last-mentioned was one of the most severe experienced in Australia, the number of sheep in the Commonwealth diminishing under its influence from 72,040,211 on 31st December, 1901, to 53,668,347 at the same date in 1902—a decrease of more than 25 per cent.

The extraordinary recuperative power of Australia is evidenced by the large increases in the numbers of stock which the good seasons, supervening on the various droughts, have witnessed. Thus, in the four years from 1902 to 1906, horses increased by 240,585, cattle by 2,282,167, and sheep by 30,019,308, the corresponding increases per cent. being horses 15.78 per cent., cattle 32.29 per cent., and sheep 55.93 per cent.

5. **Live Stock in Relation to Population.**—The number of each kind of live stock per head of the population of the Commonwealth has varied during the past forty-six years in the manner shewn in the succeeding table :—

NUMBER OF LIVE STOCK PER HEAD OF POPULATION, 1860-1906.

Year.	Horses.	Cattle.	Sheep.	Pigs.	Year.	Horses.	Cattle.	Sheep.	Pigs.
1860 ...	0.38	3.45	17.58	0.31	1900 ...	0.43	2.29	18.75	0.25
1865 ...	0.41	2.68	21.25	0.25	1901 ...	0.42	2.22	18.83	0.24
1870 ...	0.43	2.60	25.24	0.33	1902 ...	0.39	1.82	13.82	0.20
1875 ...	0.44	3.37	27.99	0.29	1903 ...	0.39	1.85	14.50	0.21
1880 ...	0.48	3.37	27.87	0.37	1904 ...	0.40	1.97	16.52	0.27
1885 ...	0.42	2.75	25.05	0.28	1905 ...	0.41	2.10	18.36	0.25
1890 ...	0.48	3.27	31.06	0.28	1906 ...	0.43	2.27	20.31	0.20
1895 ...	0.48	3.36	25.93	0.24					

Considered in relation to population, the live stock attained its maximum in the period 1890-5, and its minimum in the year 1902. During the period of forty-six years under review, the number of horses varied but slightly in proportion to population, the range being from 0.38 to 0.48 per head. In the case of cattle, the limits of variation were 1.82 and 3.45 ; sheep, 13.82 and 31.06 ; and pigs, 0.20 and 0.37.

6. **Live Stock in Relation to Area.**—The numbers of live stock per square mile in the several States of the Commonwealth on 31st December, 1906, were as follows :—

NUMBER OF LIVE STOCK PER SQUARE MILE, 31ST DECEMBER, 1906.

State.	Horses.	Cattle.	Sheep.	Pigs.
New South Wales	1.78	8.22	142.19	0.78
Victoria	4.63	20.53	147.21	2.51
Queensland	0.68	5.09	22.20	0.21
South Australia...	0.25	0.75	7.37	0.12
Western Australia	0.11	0.71	3.42	0.06
Tasmania	1.46	0.81	65.97	1.64
Commonwealth	0.59	3.14	28.13	0.27

7. **Net Exports of Principal Pastoral Products.**—The quantities by which the exports of the principal pastoral products of the Commonwealth exceeded the imports for the years 1901 to 1906 are as follows :—

QUANTITIES OF NET EXPORTS OF PRINCIPAL PASTORAL PRODUCTS OF THE COMMONWEALTH, 1901 to 1906.

Products.	Unit of Quantity.	1901.	1902.	1903.	1904.	1905.	1906.
Annimals (living)—Cattle	No.	2,299	1,560	778	625	258	391
Horses	,,	32,228	17,249	9,346	12,812	20,487	10,346
Sheep	,,	11,541	—23,358	13,384	5,132	6,569	6,477
Bones	cwt.	13,921	13,186	29,341	4,719	8,745	1,570
Hoofs	,,	24,027	21,085		16,952	19,396	4,897
Horns	,,						15,973
Meats—Frozen Beef ...	lb.	90,707,274	77,510,532	59,999,559	37,072,455	43,460,360	41,561,252
Frozen Mutton †	,,	66.288,326	42,535.383	34,965,939	46,472,597	86,764,222	90,684,899
Skins—Hides	No.	111,826	206,469	86.724	38,200	67,123	1,556
Sheep	,,	*	*	6,537,308	4,164,063	7,237,303	7,696,990
Tallow	cwt.	571,680	328,289	241,286	512,684	693,117	683,178
Wool—Greasy	lb.	385,087,467	286,499,002	263,241,958	339,137,226	380,257,165	415,141,982
Scoured	,,	66,358,262	49,362,423	61,135,654	55,897,173	56,758,160	64,882,808

* Quantity not available. † Including lamb. Note.—(—) Signifies net imports.

The values of the net exports for the same six years are :—

VALUES OF NET EXPORTS OF PRINCIPAL PASTORAL PRODUCTS OF THE COMMONWEALTH, 1901 to 1906.

Products.	1901.	1902.	1903.	1904.	1905.	1906.
	£	£	£	£	£	£
Animals (living)—Cattle ...	18,497	—30,229	—267	—788	4,860	—1,389
Horses ...	418,647	218,386	149,946	188,542	327,447	206,006
Sheep ...	—30	—50,484	14,628	—1,837	—6,834	—2,704
Bones	4,061	4,030	22,159	2,022	3,585	3,503
Hoofs	25,934	25,525		22,468	24,262	3,355
Horns						22,870
Meats—Frozen Beef	1,175,144	1,024,098	807,072	442,110	441,210	434,456
Frozen Mutton* ...	726,296	516,839	479,076	637,476	1,111,421	1,094,984
Other	451,969	431,701	143,503	222,384	236,442	147,725
Sausage Casings ...	—16,104	2,614	4,321	—8,690	2,552	1,478
Skins—Hides	102,941	151,338	35,842	26,633	71,209	—9,764
Sheep	685,562	1,065,105	1,050,413	820,319	1,321,021	1,587,579
Tallow	662,094	454,854	298,496	549,459	783,396	876,748
Wool—Greasy	11,671,210	9,593,234	9,595,586	13,137,837	15,568,290	17,539,836
Scoured	3,560,767	3,146,938	4,396,214	3,974,502	4,246,634	5,098,196
Total Values ...	19,486,988	16,553,949	16,996,989	20,012,437	24,135,495	27,001,877

* Including lamb. Note.—(—) Signifies net imports.

§ 2. Horses.

1. **Suitability of Australia for Horse-breeding.**—From the earliest times the suitability of the climate and pastures of Australia for the production of serviceable breeds of horses has been fully recognised. By the importation of high-class sires, and the careful selection of breeding mares, these natural advantages were utilised to the fullest extent, all classes of horses being bred. As a consequence of this combination of advantages the Australian horse, whether of the heavy draught, medium weight or light sadddle and carriage variety, compares more than favourably with the product of other lands. The Australian horse has been found suitable for the army in India, and large numbers are obtained annually for remount purposes.

2. **Distribution throughout the Commonwealth.**—As regards numbers, the State of New South Wales, the earliest settled of the group, established a lead, which it has ever since retained. The figures for the several States for a series of years are as follows:—

NUMBER OF HORSES, STATES AND COMMONWEALTH, 1860 TO 1906.

Year.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Commonwealth.
1860...	251,497	76,536	23,504	49,399	9,555	21,034	431,525
1865...	282,587	121,051	51,091	73,993	15,700	22,152	566,574
1870...	337,597	167,220	83,358	83,744	22,174	22,679	716,772
1875...	357,696	196,184	121,497	107,164	29,379	23,473	835,393
1880...	395,984	275,516	179,152	157,915	34,568	25,267	1,068,402
1885...	344,697	304,098	260,207	171,060	34,392	28,610	1,143,064
1890...	444,163	436,459	365,812	199,605	44,384	31,165	1,521,588
1895...	499,943	424,995	468,743	196,652	58,506	31,580	1,680,419
1900...	481,417	392,237	456,788	179,352	68,253	31,607	1,609,654
1901...	486,716	387,277	462,119	178,199	73,710	32,399	1,620,420
1902...	450,125	382,317	399,122	179,413	80,158	33,466	1,524,601
1903...	458,014	377,357	401,984	192,411	82,747	33,541	1,546,054
1904...	482,663	372,397	413,165	200,241	90,225	36,565	1,595,256
1905...	506,884	385,513	430,565	216,345	97,397	37,101	1,673,805
1906...	537,762	406,840	452,916	224,447	104,922	38,299	1,765,186

3. **Proportion in the Several States.**—The percentages of the numbers of horses in the several States on the totals for the Commonwealth for the past seven years are as follows:—

PERCENTAGE OF HORSES IN EACH STATE ON TOTAL FOR COMMONWEALTH, 1901-1906.

Year.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Commonwealth.
	%	%	%	%	%	%	%
1900...	29.91	24.37	28.38	11.14	4.24	1.96	100.00
1901...	30.03	23.90	28.52	11.00	4.55	2.00	100.00
1902...	29.52	25.08	26.18	11.77	5.26	2.19	100.00
1903...	29.62	24.41	26.00	12.45	5.35	2.17	100.00
1904...	30.26	23.34	25.90	12.55	5.66	2.29	100.00
1905...	30.28	23.03	25.72	12.93	5.82	2.22	100.00
1906...	30.47	23.05	25.66	12.71	5.94	2.17	100.00

During the period under review, the proportions in New South Wales, South Australia, Western Australia and Tasmania have increased, while those in Victoria and Queensland have diminished.

4. **Export Trade in Horses.**—Australia's export trade in horses is a fairly considerable, though somewhat fluctuating one. During the past six years it has varied in number between 9527 for the year 1903 and 32,474 in 1901, and in value between £164,224 and £438,248 respectively for the same two years. The numbers exported to the principal countries concerned in this trade are as follows:—

NUMBER AND DESTINATION OF HORSES EXPORTED, 1901 TO 1906.

Country to Which Exported.	1901.	1902.	1903.	1904.	1905.	1906.	Total for Six Years.
	No.	No.	No.	No.	No.	No.	No.
India	5,391	5,590	5,894	8,801	7,706	7,931	41,313
Natal	10,939	7,078	684	141	232	413	19,487
Cape Colony ...	14,054	3,382	42	367	58	51	17,954
Hong Kong ...	54	71	1	34	8,248	6	8,414
Straits Settlements ...	923	530	416	592	702	903	4,066
Mauritius	109	120	708	1,207	56	127	2,327
Java	104	272	308	587	326	501	2,098
Japan	2	—	25	69	1,754	51	1,901
New Zealand ...	276	96	556	659	184	80	1,851
Philippine Islands ...	19	13	290	165	773	118	1,378
China	219	102	22	38	112	298	791
Other Countries ...	384	183	581	442	657	293	2,540
Total ...	32,474	17,437	9,527	13,102	20,808	10,772	104,120

The corresponding particulars relative to the value of the horses exported are given in the next table.

VALUE OF HORSES EXPORTED FROM THE COMMONWEALTH, 1901-1906.

Country to which Exported.	1901.	1902.	1903.	1904.	1905.	1906.	Total for Six Years.
	£	£	£	£	£	£	£
India	76,485	78,867	81,251	141,682	144,802	185,254	708,341
Natal	161,028	99,714	14,555	3,303	6,550	8,193	293,343
Cape Colony ...	159,094	37,413	2,610	3,830	1,190	1,030	205,167
Hong Kong ...	775	1,765	14	1,023	119,504	160	123,241
Straits Settlements...	15,513	7,530	8,618	11,195	15,107	18,022	75,985
Mauritius	1,034	2,400	5,195	7,786	1,140	1,791	19,346
Java	2,105	5,745	6,380	11,373	4,440	12,296	42,289
Japan	100	—	715	8,095	30,215	1,990	41,115
New Zealand ...	6,934	2,786	22,051	19,310	13,206	8,261	72,548
Philippine Islands ...	190	369	8,087	3,827	10,151	2,603	25,227
China	4,460	2,330	440	851	2,671	5,942	16,694
Other Countries ...	10,530	3,747	14,358	13,505	17,754	12,714	72,608
Total ...	438,248	242,666	164,224	225,780	366,730	258,256	1,695,904

It will be seen from the foregoing tables that the export trade in horses with India, the Straits Settlements, and Java has been fairly uniform throughout the six years under review, but that the particulars for some of the other countries specified exhibit marked fluctuations. Thus in the case of Natal and Cape Colony a large export trade took place in 1901 and 1902, which, on the cessation of the South African war, dropped to comparative insignificance. The exports to Hong Kong and Japan also were exceptionally large in 1905.

5. **Comparison with Other Countries.**—The numbers of horses in some of the leading horse-breeding countries of the world, according to the latest available returns, are as follows:—

Country.	Date.	Number of Horses.	Country.	Date.	Number of Horses.
Russian Empire ...	1905	29,111,784	Canada	1901	1,577,493
Utd. States America	1905	18,718,578	Japan	1902	1,515,373
Argentine Republic	1895	4,446,859	British India[4] ...	1905	1,280,679
Germany... ...	1904	4,267,403	Rumania ...	1900	864,324
Austria-Hungary ...	1895&1900[1]	4,024,945	Mexico	1902	859,217
France[2]	1904	3,138,507	Italy	1900	741,739
United Kingdom[3] ...	1905	2,116,800	Uruguay ...	1901	575,861
Australia	1906	1,765,186	Sweden	1904	546,943

[1] Austria, 1900; Hungary, 1895. [2] Used for agriculture. [3] Agricultural horses, unbroken horses, and breeding mares only. [4] Return said to be incomplete.

6. **Relation to Population.**—In proportion to population, horses are much more numerous in Queensland than in any of the other States. South Australia is next in order, while Tasmania has the smallest number of horses per head. Particulars for the past seven years are as follows :—

NUMBER OF HORSES PER HEAD OF POPULATION, COMMONWEALTH AND STATES, 1901-1906.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
1900	0.35	0.33	0.92	0.50	0.38	0.18	0.43
1901	0.35	0.32	0.91	0.49	0.38	0.19	0.42
1902	0.32	0.32	0.78	0.49	0.38	0.19	0.39
1903	0.32	0.31	0.78	0.52	0.36	0.19	0.39
1904	0.33	0.31	0.79	0.54	0.37	0.20	0.40
1905	0.34	0.32	0.82	0.57	0.38	0.20	0.41
1906	0.35	0.33	0.85	0.58	0.40	0.21	0.43

7. **Value of Australian Horses.**—An accurate valuation of the horses in Australia cannot readily be obtained, but the following estimate may be taken as furnishing a rough approximation to the values as at 31st December, 1906 :—

VALUE OF HORSES IN AUSTRALIA, 31ST DECEMBER, 1906.

State ...	N.S.W.	Victoria.	Q'nsland.	S. Aust.	W. Aust.	Tas.	C'wealth.
	£	£	£	£	£	£	£
Value...	5,380,000	4,480,000	3,620,000	2,240,000	1,260,000	420,000	17,400,000

§ 3. Cattle.

1. **Purposes for which Raised.**—In all the States of the Commonwealth cattle-raising is carried out on a more or less extensive scale, the main object in certain States being the production of stock suitable for slaughtering purposes, and in others the raising of profitable dairy herds. The great impetus which the development of the export trade in Australian butter gave to the dairying industry in the Commonwealth led to a considerable increase in the numbers and quality of the dairy herds of the States of Victoria and New South Wales in particular, the sub-tropical portion of Australia being apparently the best adapted to this industry. On the other hand, by far the finest specimens of beef-producing cattle are those raised in the tropical districts of the Commonwealth, *i.e.*, in the northern parts of Queensland, in the Northern Territory of South Australia, and in the Kimberley districts in the north of Western Australia.

2. **Distribution throughout Commonwealth.**—Until 1880 New South Wales occupied the leading position in the Commonwealth group as a cattle-raising State, but in that year Queensland forged ahead and obtained a lead which it has since maintained. The extent of this lead has, however, varied considerably, owing principally to the effects produced by the tick fever and droughts, from both of which causes the Queensland herds suffered more severely than those of the other States. In fact, during the period from 1894, when the number of cattle in Queensland attained its maximum of rather more than 7,000,000, to 1903, when the number recorded was less than 2,500,000, an uninterrupted decline was experienced. During the past three years, however, a rapid improvement has taken place, and the total reached on 31st December, 1906, was more than 3,400,000.

The numbers of cattle in the several States at quinquennial intervals from 1860 to 1900 and thence onwards for each year are as follows :—

NUMBER OF CATTLE IN STATES AND COMMONWEALTH, 1860 to 1906.

Year.	N.S.W.	Victoria.	Queensland.	S. Aust.	W. Aust.	Tasmania	C'wealth.
1860	2,408,586	722,332	432,890	278,265	32,476	83,366	3,957,915
1865	1,961,905	621,337	848,346	158,057	45,148	90,020	3,724,813
1870	2,195,096	721,096	1,076,630	136,832	45,213	101,459	4,276,326
1875	3,134,086	1,054,598	1,812,576	219,240	50,416	118,694	6,389,610
1880	2,580,040	1,286,267	3,162,752	307,177	63,719	127,187	7,527,142
1885	1,317,315	1,290,790	4,162,652	418,140	70,408	138,642	7,397,947
1890	2,091,229	1,782,978	5,558,264	574,032	130,970	162,440	10,299,913
1895	2,150,057	1,795,314	6,822,401	636,824	200,091	162,801	11,767,488
1900	1,983,116	1,602,384	4,078,191	472,428	338,590	165,516	8,640,225
1901	2,047,454	1,625,532	3,772,707	480,777	398,547	168,661	8,493,678
1902	1,741,226	1,648,680	2,543,471	519,163	437,136	177,566	7,067,242
1903	1,880,578	1,671,828	2,481,717	536,580	497,617	185,938	7,254,258
1904	2,149,129	1,694,976	2,722,340	520,379	561,490	201,206	7,849,520
1905	2,337,973	1,737,690	2,963,695	647,631	631,825	206,211	8,525,025
1906	2,549,944	1,804,323	3,413,919	680,095	690,011	211,117	9,349,409

3. **Proportion in each State.**—During the period elapsing between 1900 and 1906 the proportion of cattle in the several States has varied considerably, as shewn hereunder :—

PERCENTAGE OF CATTLE IN EACH STATE ON TOTAL FOR COMMONWEALTH, 1901-1906.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	%	%	%	%	%	%	%
1900	22.95	18.55	47.20	5.47	3.92	1.91	100.00
1901	24.10	19.14	44.42	5.66	4.69	1.99	100.00
1902	24.64	23.33	35.99	7.35	6.18	2.51	100.00
1903	25.92	23.05	34.21	7.40	6.86	2.56	100.00
1904	27.38	21.59	34.68	6.63	7.15	2.57	100.00
1905	27.42	20.38	34.77	7.60	7.41	2.42	100.00
1906	27.27	19.30	36.52	7.27	7.38	2.26	100.00

A comparison of the positions of the several States in 1900 and 1906 shews that, while Queensland's proportion of the Commonwealth herds has suffered a marked diminution, the proportions for Victoria and Tasmania were slightly higher in the latter than in the former year, and fairly large increases were in evidence in New South Wales, South Australia and Western Australia. The most noticeable increase in proportion is that of Western Australia, from 3.92% in 1900 to 7.38% in 1906.

4. **Exports of Cattle.**—Although the various products of the cattle-raising industry bulk largely in the export trade of the Commonwealth, the export of live cattle from Australia has never been considerable. The numbers and values of those exported during the past six years are as follows :—

NUMBER AND VALUE OF CATTLE EXPORTED FROM AUSTRALIA, 1901-1906.

Year ...	1901.	1902.	1903.	1904.	1905.	1906.	Total for six years.
Number ...	2,413	4,489	939	770	1,280	552	10,448
Value ...	£22,088	£19,002	£9,302	£7,115	£15,451	£5,373	£78,331

The comparatively large figures for 1901 and 1902 were due to exports to Natal and Cape Colony.

5. **Cattle Slaughtered.**—Complete returns of the number of cattle slaughtered annually in the Commonwealth are not obtainable, as these particulars are collected in Tasmania for Hobart and Launceston only, and are not collected at all in South Australia. Estimates for these States have, however, been made, as shown in the indicated columns of the following table :—

CATTLE (INCLUDING CALVES) SLAUGHTERED, COMMONWEALTH AND STATES, 1901 TO 1906.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.[1]	W. Aust.	Tas.[1]	C'wealth.
1901	335,823	251,477	377,433	72,000	39,424	34,000	1,110,157
1902	288,131	233,206	344,731	72,000	43,882	34,000	1,015,950
1903	275,199	235,284	262,423	73,000	40,501	35,000	921,407
1904	299,089	243,937	210,715	73,000	44,199	35,000	905,940
1905	320,857	249,454	214,462	74,000	51,758	35,000	945,531
1906	340,000[1]	261,034	223,469	75,000	55,034	35,000	989,537

[1] Estimated.

For Hobart and Launceston only, the figures for the years 1901 to 1906 were, respectively, 8815, 10,193, 9842, 10,708, 12,035, and 10,503.

6. **Export of Frozen Beef.**—A large export trade in beef preserved by cold process is carried on by the Commonwealth, mainly with South Africa, the United Kingdom, and the Philippine Islands. The quantities so exported during the six years 1901 to 1906 are as follows:—

QUANTITY OF FROZEN BEEF EXPORTED FROM AUSTRALIA, 1901-1906.

Country to which Exported.	1901.	1902.	1903.	1904.	1905.	1906.	Total for Six Years.
	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.
Cape Colony	27,444,815	31,452,143	29,494,957	16,596,558	6,117,907	5,419,763	116,526,143
Natal	8,353,519	22,096,398	14,459,823	6,437,661	18,632,290	8,881,485	78,861,176
Philippine Islands ...	11,090,789	7,154,841	6,848,594	7,448,649	12,804,318	10,453,286	55,800,477
United Kingdom ...	40,964,214	14,258,593	7,779,859	3,668,850	1,603,195	1,706,386	69,981,097
Russia	—	—	—	—	—	10,247,609	10,247,607
Malta	944,673	794,414	1,375,152	1,887,526	947,363	—	5,949,128
Egypt	359,977	96,864	758,136	392,804	1,372,096	1,979,830	4,959,707
Straits Settlements ...	—	1,578,628	—	—	719,981	736,796	3,035,405
Gibraltar	759,052	166,721	19,372	—	119,272	1,247,683	2,312,100
Mauritius	—	1,495,430	409,058	455,602	371,077	391,664	3,122,831
Other countries ...	790,335	359,216	31,279	203,295	837,587	496,750	2,718,462
Total	90,707,374	79,453,248	61,176,230	37,090,945	43,525,086	41,561,252	353,514,135

The value of the frozen beef exported from the Commonwealth during the same years is as follows:—

VALUE OF FROZEN BEEF EXPORTED FROM AUSTRALIA, 1901-1906.

Country to which Exported.	1901.	1902.	1903.	1904.	1905.	1906.	Total for Six Years.
	£	£	£	£	£	£	£
Cape Colony	338,207	421,529	370,714	220,249	56,220	63,185	1,470,104
Natal	116,012	293,622	204,007	70,593	179,342	83,694	947,270
Philippine Islands ...	137,540	102,522	93,751	84,287	140,350	112,546	670,996
United Kingdom ...	545,072	178,379	123,193	35,632	16,788	15,896	914,960
Russia	—	—	—	—	—	105,445	105,445
Malta	12,323	9,944	18,852	20,318	10,540	—	71,977
Egypt	5,132	1,710	10,724	3,954	16,861	22,027	60,408
Straits Settlements ...	—	22,716	—	—	7,553	8,080	38,349
Gibraltar	10,361	2,090	242	—	1,490	12,204	26,387
Mauritius	—	22,350	5,541	4,748	3,296	4,665	40,600
Other countries ...	10,498	4,966	477	2,656	9,485	6,713	34,795
Total	1,175,145	1,059,828	827,501	442.437	441,925	434,455	4,381,291

7. **Comparison with other Countries.**—In the following comparison of the herds of Australia with those of some of the principal cattle-raising countries of the world, the latest available figures have been inserted in each case:—

HERDS OF CATTLE, VARIOUS COUNTRIES.

Country.	Date.	No. of Cattle.	Country.	Date.	No. of Cattle.
British India[1] ...	1903-4	88,738,570[2]	Rumania	1900	2,588,526
United States of America	1905	66,861,522	Sweden	1904	2,545,583
Russian Empire ...	1905	45,043,804	Spain	1891	2,217,659
Argentine Republic ...	1905	21,701,526	Cape of Good Hope ...	1904	1,954,390
Germany	1904	19,331,568	New Zealand ...	1906	1,851,750
Austria-Hungary ...	1895 & 1900[3]	16,249,535	Denmark	1903	1,840,466
France	1904	14,136,869	Belgium	1904	1,782,290
United Kingdom ...	1906	11,691,955	Bulgaria	1893	1,767,974
Australia	1906	9,349,409	Holland	1904	1,690,463
Uruguay	1901	6,326,601	Ceylon	1904	1,637,886
Canada	1901	5,576,451	Switzerland ...	1901	1,340,375
Mexico	1902	5,142,457	Japan	1902	1,275,382
Italy	1890	5,000,000	Algeria	1903	1,082,204

1. Exclusive of Bengal. 2. Inclusive of buffaloes. 3. Austria 1900, Hungary 1895.

8. **Relation to Population.**—The number of cattle per head of population differs considerably in the several States, and is also subject to marked variation from year to year in the same State. Particulars for the past seven years are as follows:—

NUMBER OF CATTLE PER HEAD OF POPULATION, 1901 to 1906.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
1900	1.46	1.34	8.26	1.30	1.88	0.96	2.29
1901	1.49	1.34	7.46	1.31	2.05	0.97	2.22
1902	1.24	1.37	4.98	1.42	2.05	1.00	1.82
1903	1.32	1.38	4.81	1.45	2.19	1.04	1.85
1904	1.47	1.40	5.22	1.40	2.32	1.12	1.97
1905	1.57	1.43	5.61	1.71	2.48	1.14	2.10
1906	1.67	1.46	6.38	1.77	2.64	1.17	2.27

9. **Value of Australian Cattle.**—The value of the cattle in the several States of the Commonwealth on the 31st December, 1906, was approximately as follows :—

VALUE OF CATTLE IN AUSTRALIA, 31ST DECEMBER, 1906.

State.	N.S.W.	Victoria.	Q'sland.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
Value	16,570,000	12,630,000	17,070,000	4,420,000	4,830,000	1,690,000	57,210,000

§ 4. Sheep.

1. **The Founding of the Commonwealth Pastoral Industry.**—Fortunately for Australia, the suitability of its climate and general conditions for the production of a high class of wool was, at an early date in the history of its settlement, surmised and tested by Captain Macarthur, one of the pioneer sheep-breeders of New South Wales. To the energy of this enterprising pastoralist is due in large measure the rapid and extremely satisfactory development of Australia as a producer of fine wool, and though it would appear that the introduction of the merino sheep into Australia was not due to Macarthur, a great deal of the credit for having successfully established the pastoral industry in Australia must certainly be his.

2. **Distribution throughout Commonwealth.** — With the exception of a short period in the early Sixties, when the flocks of Victoria outnumbered those of the mother State, New South Wales has maintained amongst the Commonwealth group the lead in sheep production which naturally attached to it as the portion of the Commonwealth in which settlement was first effected. From 1878 onwards, the number of sheep in New South Wales has, in every year except 1902, represented more than half the total for the Commonwealth.

The number of sheep in the several States at quinquennial intervals from 1860 to 1900, and for each year onwards to 1906, are as follows :—

NUMBER OF SHEEP IN AUSTRALIA, 1860 TO 1906.

Year.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Total C'wealth.
1860	6,119,163	5,780,896	3,449,350	2,824,811	260,136	1,700,930	20,135,286
1865	8,132,511	8,835,380	6,594,966	3,779,308	445,044	1,752,719	29,539,928
1870	16,308,585	10,761,887	8,163,818	4.400,655	608,892	1,349,775	41,593,612
1875	25,353,924	11,749,532	7,227,774	6,179,395	881,861	1,731,723	53,124,209
1880	35,398,121	10,360,285	6,935,967	6,463,897	1,231,717	1,796,715	62,186,702
1885	37,820,906	10,681,837	8,994,322	6,643,565	1,702,719	1,648,627	67,491,976
1890	55,986,431	12,692,843	18,007,234	7,050,544	2,524,913	1,619,256	97,881,221
1895	47,617,687	12,791,084	19,856,959	6,604,319	2,295,832	1,523,846	90,689,727
1900	40,020,506	10,841,790	10,339,185	5,283,247	2,434,311	1,683,956	70,602,995
1901	41,857,099	10,673,265	10,030,971	5,060,540	2,625,855	1,792,481	72,040,211
1902	26,649,424	10,504,741	7,213,985	4,922,662	2,704,880	1,672,655	53,668,347
1903	28,656,501	10,336,216	8,392,044	5,350,258	2,600,633	1,597,053	56,932,705
1904	34,526,894	10,167,691	10,843,470	5,874,979	2,853,424	1,557,460	65,823,918
1905	39,506,764	11,455,115	12,535,231	6,202,330	3,120,703	1,583,561	74,403,704
1906	44,132,421	12,937,440	14,886,438	6,661,217	3,340,745	1,729,394	83,687,655

3. **Proportion in the Several States.**—Particulars concerning the relative positions of the several States with respect to the total flocks of Australia, and the variations in such positions which have taken place during the past six years, are as hereunder :—

PERCENTAGE OF SHEEP IN EACH STATE ON TOTAL FOR COMMONWEALTH, 1901-1906.

Year.	N.S.W.	Vic.	Q'nsland.	S. Aust.	W. Aust.	Tas.	C'wealth.
	%	%	%	%	%	%	%
1900 ...	56.68	15.36	14.64	7.48	3.45	2.39	100.00
1901 ...	58.10	14.82	13.92	7.02	3.65	2.49	100.00
1902 ...	49.66	19.57	13.44	9.17	5.04	3.12	100.00
1903 ...	59.33	18.16	14.74	9.40	4.57	2.80	100.00
1904 ...	52.45	15.45	16.47	8.93	4.33	2.37	100.00
1905 ...	53.10	15.40	16.85	8.33	4.19	2.13	100.00
1906 ...	52.73	15.46	17.79	7.96	3.99	2.07	100.00

4. **Exports of Sheep.**—As in the case of cattle, the exports of live sheep from Australia are of comparatively small importance. The principal countries to which such exports have been consigned during recent years are Natal, Straits Settlements, and New Caledonia. The following are the particulars for the past six years :—

NUMBER AND VALUE OF LIVE SHEEP EXPORTED FROM AUSTRALIA, 1901 TO 1906.

Particulars.	1901.	1902.	1903.	1904.	1905.	1906.	Total for Six Years.
Number ...	12,094	24,296	18,111	7,746	12,090	17,979	92,316
Value ...	£12,104	£15,558	£24,468	£11,219	£17,429	£48,699	£129,477

5. **Sheep Slaughtered.**—The numbers of sheep slaughtered in those States for which slaughtering statistics are available, are as follows :

SHEEP (INCLUDING LAMBS) SLAUGHTERED, 1901 TO 1906.

Year.	N.S.W.	Victoria.	Q'sland.	Sth. Aust.[1]	West Aust.	Tasmania.[1]	C'wealth.
1901	4,519,133	2,469,797	554,705	678,000	428,534	322,000	8,972,169
1902	4,635,850	2,827,938	715,443	681,000	482,882	325,000	9,668,113
1903	3,277,120	2,652,569	453,666	684,000	412,549	332,000	7,811,904
1904	3,058,536	2,305,729	400,688	691,000	499,585	334,000	7,289,538
1905	4,283,631	2,576,816	587,406	700,000	476,010	335,000	8,958,363
1906	4,500,000[1]	2,826,144	449,547	710,000	468,759	335,000	9,289,450

1. Estimated.

For Hobart and Launceston only the figures for the years 1901 to 1906 were respectively :—101,627, 114,900, 122,223, 109,992, 101,863 and 104,081.

6. **Exports of Frozen Mutton and Lamb.** — Australia's export trade in mutton and lamb preserved by cold process is one which has, in recent years, advanced rapidly, and at the present time amounts to more than £1,000,000 per annum. In all the States considerable attention is now being paid to the breeding of a class of sheep that will best meet the requirements of consumers. Crosses between the Merino and

the Lincoln, or between the Merino and the Leicester breeds have proved exceedingly valuable, as they furnish both a good quality of wool and also an excellent carcase for export purposes. The breeding of Shropshire and Southdown sheep with a view to combining meat production with that of wool is also on the increase. Special attention is being paid to the raising of lambs for the home markets, as it is becoming very widely recognised that with suitable breeds, the export trade in lambs is a very profitable one.

Australia's principal customers in this trade are the United Kingdom and South Africa, while in Egypt and Canada a demand for Australian frozen mutton and lamb has developed in recent years. A regular, though not very extensive trade is also done with the Philippine Islands. The quantities exported to various countries are :—

QUANTITY OF FROZEN MUTTON AND LAMB EXPORTED FROM AUSTRALIA, 1901 TO 1906.

Country to which Exported.	1901.	1902.	1903.	1904.	1905.	1906.	Total for Six Years.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
United Kingdom	45,562,565	19,063,120	18,202,206	35,069,929	62,767,593	67,251,672	247,917,085
Natal	6,250,816	12,667,264	10,350,121	6,980,584	14,011,235	13,349,876	63,609,896
Cape of Good Hope ...	11,435,804	9,475,714	4,577,341	3,625,294	6,524,229	5,974,671	41,613,053
Philippine Islands	1,107,499	870,294	720,284	749,378	677,221	552,233	4,676,879
Malta	534,439	416,204	1,229,867	763,909	659,171	...	3,603,590
Egypt	66,832	160,346	223,483	186,348	744,377	1,125,423	2,506,809
Canada	124,544	154,000	...	...	196,331	969,352	1,444,227
Hong Kong	358,960	147,056	273,810	161,535	302,077	166,059	1,409,497
Gibraltar	115,248	118,100	292,138	76,396	225,659	285,510	1,113,051
Ceylon	281,264	320,492	5,200	119,684	145,078	151,549	1,023,267
Mauritius	...	497,422	...	90,545	58,651	...	646,618
Straits Settlements ...	...	...	...	...	382,101	243,508	625,609
Other Countries	450,355	215,618	9,453	39,930	164,621	622,532	1,502,509
Total	66,288,326	44,105,600	35,883,903	47,863,532	86,858,344	90,692,385	371,692,090

The corresponding particulars concerning the values of the exports are :—

VALUES OF FROZEN MUTTON AND LAMB EXPORTED FROM AUSTRALIA, 1901 to 1906.

Country to which Exported.	1901.	1902.	1903.	1904.	1905.	1906.	Total for Six Years.
	£	£	£	£	£	£	£
United Kingdom...	467,013	234,385	268,697	488,830	834,629	839,360	3,132,914
Natal	80,139	162,082	131,152	91,388	156,950	142,031	763,692
Cape of Good Hope	142,027	111,467	58,109	50,037	79,294	65,801	506,735
Philippine Islands	13,047	10,881	9,199	9,680	7,442	6,309	56,558
Malta	6,783	4,143	14,492	8,741	7,276	—	41,435
Egypt	993	2,278	2,945	2,144	8,580	12,674	29,614
Canada	1,244	965	—	—	2,792	12,260	17,261
Hong Kong ...	3,022	1,923	3,991	2,234	3,473	1,906	16,549
Gibraltar ...	1,770	1,230	3,273	955	2,765	2,974	12,967
Ceylon	4,706	4,542	70	1,613	1,774	1,713	14,418
Mauritius ...	—	6,205	—	1,214	672	—	8,091
Straits Settlements	—	—	—	—	4,514	2,579	7,093
Other Countries ...	5,552	3,371	186	525	1,808	7,513	18,955
Total ...	726,296	543,422	492,114	657,361	1,111,969	1,095,120	4,626,282

7. **Comparison with other Countries.**—As regards the size of its flocks and the quantity and quality of wool produced, Australia occupies the foremost position amongst the sheep-raising countries of the world. The following comparison gives the latest available figures relative to the number of sheep in the principal wool-producing countries :—

NUMBER OF SHEEP IN VARIOUS COUNTRIES.

Country.	Date.	No. of Sheep	Country.	Date.	No. of Sheep.
Australia	1906	83,687,655	Bulgaria	1893	6,868,291
Argentine Republic ...	1895	74,379,562	Rumania	1900	5,655,444
Russian Empire[1] ...	1905	64,697,663	Mexico	1902	3,424,430
United States of America	1905	50,631,619	Orange River Colony	1904	3,145,685
United Kingdom ...	1905	29,076,777	Servia	1900	3,013,644
New Zealand	1906	20,108,471	Canada	1901	2,510 239
British India	1904	17,904,748	Sweden	1904	1,105,908
France	1904	17,800,965	Norway	1900	998,819
Uruguay	1901	17,624,548	Denmark	1903	876,830
Spain	1891	13,359,473	Transvaal	1904	846,939
Cape of Good Hope ...	1904	11,818,829	Natal	1904	726,752
Austria-Hungary	1895 1900	10,743,707	Falkland Islands ... Netherlands ...	1904 1904	702,444 606,785
Algeria	1903	8,958,537	Belgium ...	1895	235,722
Germany	1904	7,907,173	Switzerland ...	1901	219,438
Italy	1890	6,900,000			

[1] Including goats.

8. **Relation to Population.**—The relation of the flocks of the several States to the populations at the end of each of the past seven years is as follows :—

NUMBER OF SHEEP PER HEAD OF POPULATION.

Year.	N.S.W.	Vic	Q'land.	S. Aust.	W. Aust.	Tas	Total C'wealth.
1900	29.42	9.06	20.94	14.59	13.53	9.74	18.75
1901	30.44	8.81	19.83	13.84	13.58	10.28	18.83
1902	18.99	8.67	14.12	13.43	12.68	9.43	13.82
1903	20.08	8.55	16.28	14.51	11.46	8.90	14.50
1904	23.69	8.40	20.79	15.76	11.78	8.64	16.52
1905	26.48	9.40	23.74	16.40	12.25	8.74	18.36
1906	28.91	10.50	27.82	17.35	12.76	9.60	20.31

9. **Value of Australian Sheep.**—The total value on 31st December, 1906, of the sheep in the Commonwealth and its several States is approximately as follows :—

ESTIMATED VALUE OF AUSTRALIAN SHEEP, 31ST DECEMBER, 1906.

State	N.S.W.	Victoria.	Q'nsland.	Sth. Aust.	W. Aust.	Tasmania.	C'wealth.
Value ... £	24,273,000	7,116,000	7,815,000	3,664,000	2,004,000	1,038,000	45,910,000

§ 5. Wool.

1. **Importance of Wool Production.**—The chief contributing factor to the pastoral wealth of Australia is the production of wool, the value of the output for the year 1906 being about £23,000,000. Most of the wool produced in the Commonwealth is exported, but with the increased activity of the local woollen mills there has, in recent years, been an increasing quantity used in Australia, although even now the quantity so used represents less than 1½ per cent. of the whole clip.

2. **Greasy and Scoured Wool.**—In the returns of imports and exports of wool furnished to the Customs Department the quantities are shewn as "greasy," or as "scoured

and washed," but for the purposes of comparing the clips of the several States or of the Commonwealth as a whole for a series of years, it is convenient to have the total production expressed in terms of greasy wool.

The total quantity of Australian wool, scoured and washed before export, is usually only about 25 per cent. of the total clip. The ratio of loss of weight in scouring, however, varies largely with season, locality, and breed; hence it seems preferable to express "scoured and washed" wool in terms of "greasy" rather than *vice versa*, the absolute error arising from any uncertainty as to the average loss of weight having thus the least effect.

3. **Total Production.**—In the following tables, relative to the production of wool in the several States for the six years 1901 to 1906, wool returned as "scoured and washed" has been converted into the estimated equivalent amount of "greasy" on the assumption that two pounds of "greasy" wool are on the average required to produce one pound of "scoured and washed." On this basis the estimated total production of wool (in the grease) in the several States of the Commonwealth for the years 1901 to 1906 may be said to be as in the following table:—

PRODUCTION OF WOOL, ESTIMATED AS "GREASY," COMMONWEALTH AND STATES, 1901 TO 1906.

State.	1901.	1902.	1903.	1904.	1905.	1906.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
N.S.W. ...	311,318,648	218,505,670	228,173,045	252,194,736	298,490,955	326,999,426
Victoria ...	81,227,029	71,109,528	55,044,659	80,036,363	66,118,195	67,426,109
Queensland	70,872,670	42,100,238	53,908,667	66,037,701	70,393,840	86,363,630
South Aust.	40,415,378	37,285,621	37,766,673	36,727,324	37,262,504	44,602,680
West. Aust.	14,290,156	13,380,181	13,312,326	12,513,185	17,732,597	15,405,132
Tasmania ...	9,805,154	9,167,911	5,731,783	11,539,735	10,666,430	11,359,760
C'wealth. ...	527,929,035	391,549,149	393,937,153	459,049,044	500,664,521	552,156,737

4. **Wool Locally Used.**—Of this production the quantity used in the local manufactories of the several States of the Commonwealth was approximately as follows:—

QUANTITY OF WOOL, ESTIMATED AS "GREASY," USED IN COMMONWEALTH FACTORIES, 1901 TO 1906.

State.	1901.	1902.	1903.	1904.	1905.	1906.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
N.S.W. ...	1,343,070	1,358,920	1,293,600	726,900	729,470	836,730
Victoria ...	3,408,526	3,473,835	3,772,390	4,027,080	4,493,041	4,765,687
Queensland	312,000	219,292	164,234	185,802	224,860	253,842
South Aust.	184,846	201,657	271,285	311,469	376,615	387,264
West. Aust.	—	—	—	—	—	—
Tasmania ...	776,000	780,000	812,000	811,500	1,067,050	1,005,628
C'wealth. ...	6,024,442	6,033,704	6,313,509	6,062,751	6,891,036	7,249,151

5. **Exports of Wool.**—Nearly half of the exports of wool from the Commonwealth are despatched to the United Kingdom, the other leading consignees being France, Germany, Belgium, and the United States of America. The following table shews for

the years 1901 to 1906, the quantities of "greasy" wool exported from the Commonwealth to the principal countries of destination :—

COMMONWEALTH WOOL EXPORTED IN THE GREASE, 1901 TO 1906.

Country to which Exported.	1901.	1902.	1903.	1904.	1905.	1906.	Total for Six Years.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
United Kingdom	234,671,708	171,255,911	131,981,041	170,961,234	167,675,702	193,740,722	1,070,286,318
France	54,651,054	48,207,243	52,700,279	71,302,579	95,812,717	85,755,279	408,429,151
Germany	51,223,381	40,659,728	45,946,327	48,954,748	62,727,286	56,479,224	305,990,694
Belgium	33,176,804	20,302,265	21,579,126	28,318,161	35,213,749	53,972,671	192,562,776
U.S. of America...	8,162,316	4,439,461	8,461,508	17,023,952	14,996,174	21,090,888	74,174,299
Italy	2,674,495	1,312,711	2,208,104	2,245,207	3,085,474	1,184,080	12,710,071
Japan	157,514	162,607	266,398	290,491	453,645	2,465,742	3,796,397
New Zealand ...	483,844	84,827	101,880	101,029	197,948	183,845	1,153,373
India	62,157	156,659	275,637	96,736	91,431	162,724	845,344
Canada	...	...	24,000	53,513	138,416	173,944	389,873
Other Countries...	17,151	40,157	2,352	47,000	27,882	144,471	279,013
Total ...	385,280,424	286,621,569	263,546,652	339,394,650	380,420,424	415,353,590	2,070,617,309

Similar particulars concerning the exports of "scoured and washed" wool are as follows :—

COMMONWEALTH EXPORTS OF "SCOURED AND WASHED WOOL," 1901 TO 1906.

Country to which Exported.	1901.	1902.	1903.	1904.	1905.	1906.	Total for Six Years.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
United Kingdom	49,176,041	31,387,903	38,789,131	30,108,654	28,469,808	35,301,652	213,233,189
France	7,321,775	7,229,229	10,354,637	8,578,307	13,816,332	11,290,425	58,590,705
Germany	5,606,254	5,325,117	7,531,339	8,682,885	6,897,390	6,905,930	40,948,915
Belgium	3.175,954	4,512,655	3,431,979	3,992,454	5,556,547	9,098,036	29,767,625
Japan	776,322	765,866	827,041	4,235,144	1,579,164	2,106,820	10,290,357
Italy...	187,276	68,176	82,359	40,651	168,444	99,663	646,569
India	81,262	85,531	108,804	85,199	64,198	68,007	493,001
New Zealand ...	21,870	...	4,560	19,631	6,266	18,624	70,951
Canada	...	...	12,750	5,841	781	...	19,372
Other Countries...	22,101	...	720	162,280	216,493	138	401,732
Total ...	66,368,855	49,374,477	61,143,320	55,911,046	56,775,423	64,889,295	354,462,416

The total value of the wool exported from the Commonwealth to each of the various countries during the six years under review was:—

TOTAL VALUE OF WOOL EXPORTED FROM THE COMMONWEALTH, 1901 TO 1906.

Country to which Exported.	1901.	1902.	1903.	1904.	1905.	1906.	Total for Six Years.
	£	£	£	£	£	£	£
United Kingdom ...	9,797,001	7,610,114	7,366,423	8,498,648	8,750,240	10,706,181	52,728,607
France	2,003,197	2,133,975	2,676,582	3,419,045	5,053,870	4,577,034	19,863,703
Germany	1,852,053	1,755,053	2,342,619	2,569,677	3,143,614	2,962,586	14,625,602
Belgium	1,146,349	924,447	1,044,297	1,390,564	1,905,822	3,113,778	9,525,257
United States of America	273,933	198,588	388,247	783,998	647,296	912,679	3,204,741
Italy	90,842	55,367	92,377	94,268	143,995	58,971	535,820
Japan	48,653	55,802	71,582	332,602	140,704	279,860	929,203
India	5,915	6,483	13,671	10,518	7,928	12,084	56,599
New Zealand	17,461	3,784	3,950	4,992	5,218	8,565	43,970
Canada	...	...	1,756	2,620	5,459	8,215	18,050
Other Countries ...	2,050	850	95	15,338	18,070	5,816	42,219
Total	15,237,454	12,744,463	14,001,599	17,122,270	19,822,216	22,645,769	101,573.771

6. **Care needed in Comparing Clips.**—The Customs returns, from which statistics of wool production are usually compiled, do not furnish a reliable indication of increase or decrease in successive clips, since in each case they relate to the year ended 31st December. Ordinarily, therefore, they include for any year imports and exports of wool belonging to two distinct clips. A further defect in the comparability of successive clips arises as follows:—Owing to climatic or other conditions the time of shearing is so far delayed that one clip may include almost thirteen months' growth of wool, while the succeeding one may include little more than eleven months' growth. An instance of this occurred in some portions of the Commonwealth in connection with the clips of 1906 and 1907. The shearing in the former case was somewhat late, while in the latter it took place at the usual time. To what extent the 1907 clip was affected by this cause cannot be stated as the wool statistics for that clip are not yet available.

7. **Wool-producing Countries in Southern Hemisphere.**—The next table, compiled by Messrs. Helmuth Schwartze and Co., the well-known firm of English wool brokers, furnishes interesting evidence of the relative importance of the three great wool-producing countries of the Southern Hemisphere. The figures given represent for the respective years the imports of wool into Europe and North America :—

IMPORTS OF WOOL INTO EUROPE AND NORTH AMERICA.

Year	Commonwealth and New Zealand.	Cape of Good Hope.	River Plate.	Total
	Bales.	Bales.	Bales.	Bales.
1901	1,745,000	217,000	532,000	2,494,000
1902	1,699,000	234,000	512,000	2,445,000
1903	1,451,000	234,000	558,000	2,243,000
1904	1,371,000	201,000	476,000	2,048,000
1905	1,633,000	209,000	488,000	2,330,000
1906	1,833,000	238,000	487,000	2,558,000

It will be seen that of the total importations shewn in this table, the Commonwealth of Australia and the Dominion of New Zealand account for about 70 per cent.

8. **England's Importation of Wool.**—The quantity and value of wool imported into the United Kingdom during the year 1906 from the principal wool-producing countries, furnish evidence of the important position which the Commonwealth occupies in the supply of wool to the mother country. This is shewn in the following table :—

IMPORTS OF WOOL INTO THE UNITED KINGDOM, 1906.

Country from which Imported.	Quantity.	Value.	Country from which Imported.	Quantity.	Value.
	lbs.	£		lbs.	£
Australia ...	250,279,245	11,514,733	Egypt	3,764,450	103,607
New Zealand ...	146,759,673	6,959,836	China	3,649,813	99,367
Cape of Good Hope	53,997,565	1,876,660	Falkland Islands	3,558,536	125,244
British India ...	46,868,733	1,478,815	Uruguay ...	3,037,145	126,833
Argentine Republic	29,984,152	1,199,963	U.S. of America ...	2,326,896	91,620
France	23,854,610	1,078,409	Peru	2,152,272	90,242
Chile	17,200,939	593,278	Portugal ...	1,930,004	65,700
Natal	13,273,277	397,555	Other Countries ...	4,624,450	167,419
Turkey	12,560,051	417,265			
Russia	8,442,134	302,391			
Belgium ...	6,999,458	289,748	Total ...	639,342,939	27,146,133
Germany ...	4,079,536	167,448			

9. **The Wool Market.**—The clip of 1906 was an exceptional one from two points of view, the number of bales of wool exceeded 2,000,000 for the first time in the history of Australia, and the prices realised were on the average considerably higher than have been touched for many years, with the result that the wool season of 1906-7 was one of the most prosperous experienced in the Commonwealth.

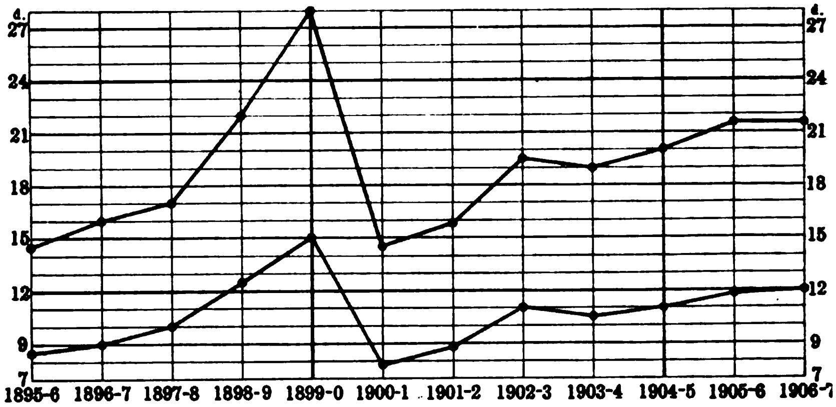
The following particulars concerning the prices of greasy Merino wool which ruled in the Australian markets during the wool season 1906-7 are taken from Dalgety's *Review* for July, 1907 :—

GREASY MERINO WOOL, 1906-7.

Class of Wool.	State.				
	N.S.W.	Victoria.	Queensland.	South Aust.	Tasmania.
	d.	d.	d.	d.	d.
Super	11¾—12¾	15½—16½	11½—12	11½—14	13½—14
Good	10½—11½	12—13	10½—11¼	9½—11	11½—12½
Inferior	7½—8¾	10½—11½	7½—8¾	6½—8	9—10½

The fluctuations in the prices of greasy and scoured wool of good average quality from 1895-6 to 1906-7, shewn by the graphs hereinunder, are in agreement with the results given in Dalgety's *Review* for 1907 :—

AVERAGE PRICES OF AUSTRALIAN WOOL, 1895-6 TO 1906-7.

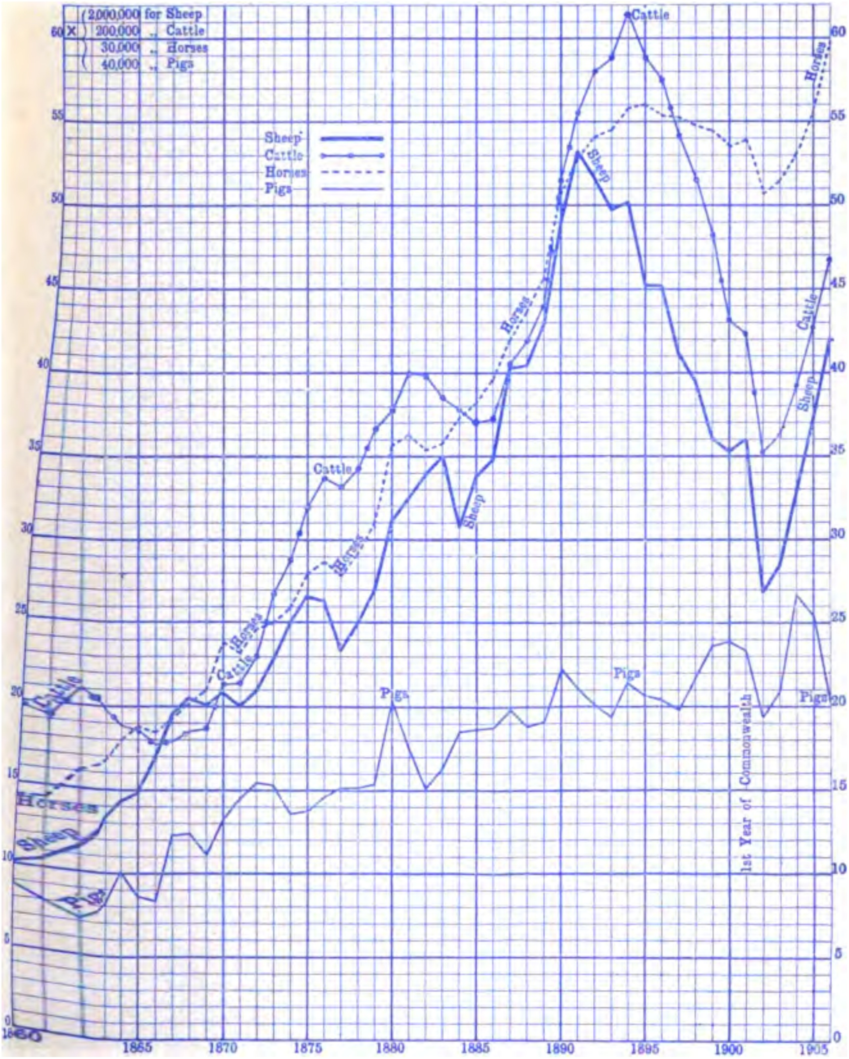


The upper line and lower line shew respectively the average prices of scoured and greasy Merino fleece of good average quality.

§ 5. Graphical Representation of Pastoral Production.

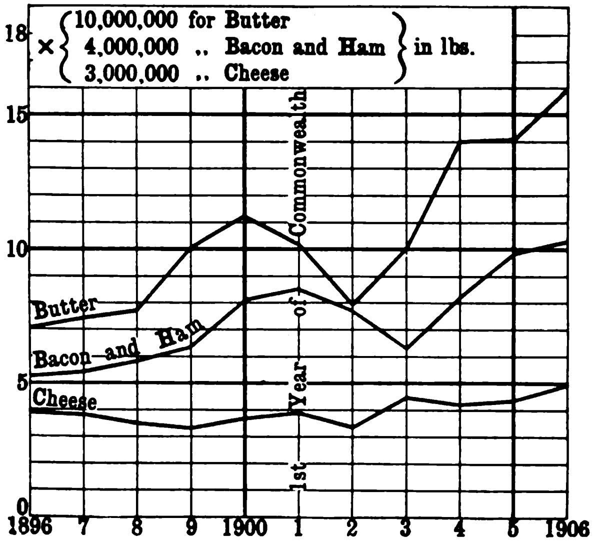
1. **General.**—(*See graphs page* 295).—The figures for the total number of horses, cattle, sheep and pigs being known with considerable accuracy only from 1860 onwards, the graphs are restricted to the period indicated. It will be observed on a general survey of these that up to 1890 there was a fairly uniform increase in the number of each class of animals, or, more exactly, the number of horses increased up to 1895, of cattle to 1894, of sheep to 1891, of pigs say up to 1904. This, however, was followed by diminutions, a small one of horses till 1902—followed by a rapid recovery, and enormous ones also till 1902 in the number of cattle and sheep—again followed by very rapid recovery.

GRAPHS SHEWING NUMBER OF HORSES, CATTLE, SHEEP, AND PIGS IN AUSTRALIA FROM 1860 TO 1906.



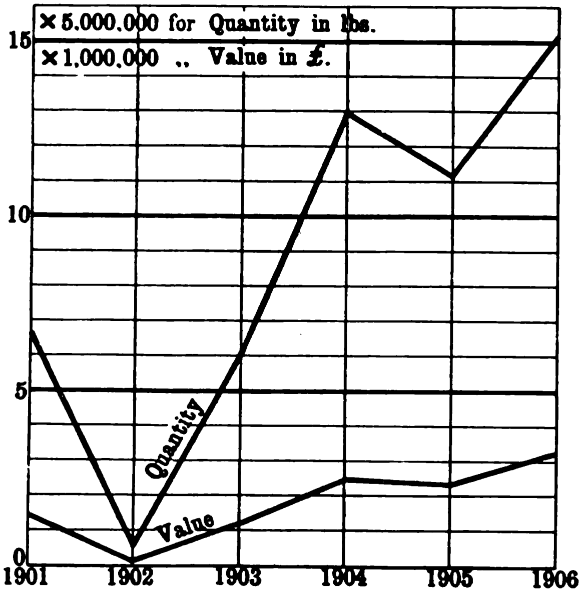
EXPLANATION OF GRAPH.—The base of each small square represents an interval of one year. The total of the sheep, cattle, horses, and pigs for the Commonwealth is indicated by the several curves or graphs, the vertical side of a small square representing 2,000,000 in the case of sheep; 200,000 for cattle; 30,000 for horses; 40,000 for pigs.

GRAPHS SHEWING THE PRODUCTION OF BUTTER AND CHEESE, AND BACON AND HAM, IN THE COMMONWEALTH, FROM 1896 TO 1906.



Explanation of Graph.—The base of each small rectangle represents an interval of one year, and the vertical height of each rectangle denotes in the case of butter 10,000,000 lbs.; in the case of bacon and ham, 4,000,000 lbs.; and in the case of cheese, 3,000,000 lbs.

GRAPHS SHEWING THE QUANTITY AND VALUE OF NET EXPORTS OF BUTTER FROM THE COMMONWEALTH, FROM 1901 TO 1906.



Explanation of Graph.—The base of each small rectangle represents an interval of one year, and the vertical height of each small rectangle represents 5,000,000 lbs. in weight, or £1,000,000 in value.

It is worthy of notice that the rate of recovery is very satisfactory. There has never been a triennium in Australian history when the number of sheep increased as it did from 1903 to 1906; the increases of cattle and of horses for the same period are similar to the very remarkable increases between 1889 and 1892 and 1888 and 1891 respectively. The year 1902 shews a great falling-off in all four classes, due to the prolonged drought-conditions which culminated in that year. It is remarkable too, that after so prolonged an adverse condition the numbers should increase as rapidly as they have, a fact which points to the elasticity of the natural resources of Australia, and its great recuperative power.

2. **Graph for Cattle.**—For the Commonwealth, the number of cattle declined from 1862 to 1866, from 1881 to 1885, and again from 1894 to 1901, but increased very rapidly for the intermediate periods and since. Among the States the increases for Queensland are the most remarkable, and the figures for that State have a predominating influence on the result.

3. **Graph for Horses.**—For the Commonwealth, the graph shews that the number of horses increased with considerable regularity practically from 1860 to 1895, and then again from 1902 onwards. No one State's figures have a predominating influence on the curve for the Commonwealth, since the largest, viz., those for New South Wales, Queensland, and Victoria, are all comparable in magnitude.

4. **Graph for Sheep.**—For the Commonwealth, the figures for the total number of sheep shew a fairly steady and rapid progression from 1860 to 1891, a decline from 1891 to 1902, and again a rapid progression from that last date onwards. The figures for New South Wales have a predominating influence.

5. **Graph for Pigs.**—The curve for the Commonwealth, while shewing marked fluctuations every two or three years, shews also a steady increase on the whole. The form of this curve is profoundly influenced by the numbers for New South Wales and Victoria.

SECTION VIII.

AGRICULTURAL PRODUCTION.

§ 1. Introductory.

1. **Early Attempts at Agriculture.**—The instructions issued to Captain Phillip on the 25th April, 1787, directed him, amongst other things, to proceed as soon as possible to the cultivation of the soil "under such regulations as may appear to be necessary and best calculated for securing supplies of grain and provisions." When the settlers landed at Botany Bay, however, it was found that the glowing accounts published in England by members of Captain Cook's expedition of the fertility of the soil in the vicinity of the existing settlement were considerably overdrawn. Even when Phillip and his company moved round to Port Jackson on the 26th January, 1788, matters were for a time in no better case. The ground in the immediate neighbourhood of the settlement was not suitable for the cultivation of cereal crops, and when the time came to cultivate the soil it was found that there were very few who possessed the slightest acquaintance with the art of husbandry.

2. **The First Sowing.**—In his despatch of the 15th May, 1788, Captain Phillip states that it was proposed to sow eight acres with wheat and barley, although, owing to the depredations of field mice and ants, he was doubtful of the success of the crops.

3. **Discovery of Suitable Agricultural Land.**—A branch settlement was formed at Rosehill, on the Parramatta River, towards the close of 1788, and here corn crops were successfully raised. In his despatch of 12th February, 1790, Phillip refers to the harvest at Rosehill at the end of December, 1789, as consisting of 200 bushels of wheat and sixty of barley, in addition to small quantities of oats, Indian corn, and flax. By the year 1791 there were 213 acres under crop in this locality. In 1792 a new settlement was formed at Toongabbie, about three miles westward of Parramatta, where Phillip states "there are several thousand acres of exceeding good ground." The Hawkesbury Valley, which probably contains some of the richest land in the world, was first settled in 1794. For a long time agricultural operations in Australia were restricted to the narrow belt of country between the tableland and the east coast of New South Wales, as it was not until the year 1813 that a passage was discovered across the Blue Mountains to the fertile plains of the west.

§ 2. Progress of Agriculture.

1. **Early Records.**—In an "Account of Live Stock and Ground under Crop in New South Wales, 19th August, 1797," Governor Hunter gives the acreage under crop as follows:—Wheat, 3361 acres; maize, 1527 acres; barley, 26 acres; potatoes, 11 acres; and vines, 8 acres.

At a muster taken in 1808 the following was the return of crops:—Wheat, 6877 acres; maize, 3389 acres; barley, 544 acres; oats, 92 acres; peas and beans, 100 acres; potatoes, 301 acres; turnips, 13 acres; orchards, 546 acres; and flax and hemp, 34 acres.

By the year 1850 the area under crop had increased to 491,000 acres, of which 198,000 acres were cultivated in what is now the State of New South Wales, and 169,000 acres in Tasmania.

The gold discoveries of 1851 and subsequent years had at first a very disturbing effect on agricultural progress, the area under crop declining from 491,000 acres in 1850 to 458,000 acres in 1854; cultivation in New South Wales dwindled by nearly 66,000 acres, while in Tasmania the area fell off by over 41,000 acres. The demand for agricultural products occasioned by the large influx of population was, however, soon reflected in the increased area cultivated, for at the end of 1858 the land under crop in Australia measured over a million acres. The largest increase took place in Victoria, which returned an area of 299,000 acres, South Australia had 264,000 acres in cultivation, Tasmania 229,000 acres, and New South Wales 223,000 acres.

2. **Progress of Cultivation since 1860.**—The following table shews the area under cultivation in each of the Commonwealth States at various periods since 1860 and during each year of the period 1901-7. The area under artificially-sown grasses is excluded in all the States, except for the years 1860-79 in the case of New South Wales, where the acreage cannot be separated. During those years, however, the area laid down under ermanent grasses could not have been very large:—

AREA UNDER CROP IN AUSTRALIA, 1860-1 TO 1906-7.

Season.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Commonwealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1860-1	260,798	387,282	3,353	359,284	24,705	152,860	1,188,282
1865-6	378,255	448,194	14,414	547,124	38,180	159,547	1,585,714
1870-1	426,976	692,840	52,210	801,571	54,527	157,410	2.185,534
1875-6	451,139	736,520	77,347	1,111,882	47,571	142,547	2,567,006
1880-1	629,180	1,548,809	113,978	2,087,237	57,707	140,788	4,577,699
1885-6	737,701	1,867,496	198,334	2,298,412	60,058	144,761	5,306,762
1890-1	852,704	2,031,955	224,993	2,093,515	69,678	157,376	5,430,221
1895-6	1,348,600	2,413,235	285,319	2,092,942	97,821	212,703	6,450,620
1900-1	2,445,564	3,114,132	457,397	2,369,680	201,338	224,352	8,812,463
1901-2	2,278,370	2,965,681	483,460	2,236,552	217,441	232,550	8,414,054
1902-3	2,249,092	3,246,568	275,383	2,224,593	229,992	246,923	8,472,551
1903-4	2,545,940	3,389,069	566,589	2,256,824	283,752	259,611	9,301,785
1904-5	2,674,896	3,321,785	539,216	2,275,506	327,391	226,228	9,365,022
1905-6	2,840,235	3,219,962	522,748	2,255,569	364,704	230,237	9,433,455
1906-7	2,826,657	3,303,586	559,753	2,150,291	460,825	244,744	9,545,856

3. **Artificially-Sown Grasses.**—Complete statistics regarding the area sown down in grasses are available for the whole of the States only since the year 1896, and are as shewn hereunder:—

AREA UNDER SOWN GRASSES, 1896-7 TO 1906-7.

Season.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Commonwealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1896-7	384,016	172,582	11,960	20,027	4,044	253,306	845,935
1901-2	467,839	162,954	34,679	23,510	3,711	314,422	1,007,115
1902-3	477,629	565,635	24,286	23,636	3,228	319,090	1,413,504
1903-4	552,501	962,665	15,639	24,118	2,952	343,284	1,901,159
1904-5	607,997	953,543	35,589	24,912	3,964	378,346	2,004,351
1905-6	627,530	1,040,335	40,802	26,082	5,456	404,653	2,144,858
1906-7	679,631	1,095,642	45,990	23,679	6,787	432,128	2,301,857

The considerable increase in the area of the grass lands of the Commonwealth is due to the great development of the dairying industry which has taken place during the last ten years, and which is referred to at length in the succeeding section.

§ 3. Relative Importance of Crops.

1. **Various Crops.**—The following table has been compiled in order to shew the relative importance of the various crops in each State and in the Commonwealth as a whole. The figures refer to the season 1906-7:—

DISTRIBUTION OF CROPS IN AUSTRALIA, 1906-7.

Crop.	N.S.W.	Victoria	Qsl'd.	S. Aust.	W. Aust.	Tas.	Total for C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Wheat	1,866,253	2,031,893	114,575	1,681,982	250,283	32,808	5,977,794
Oats	56,431	380,493	1,236	57,000	28,363	58,320	581,843
Barley—							
Malting ...	5,528	30,052	6,696	28,122	1,138	4,046	106,436
Other... ...	2,451	22,764	1,905		2,452	1,282	
Maize	174,115	11,559	139,806	...	101	...	325,581
Beans and Peas ...	124	12,012	...	7,109	937	10,642	30,824
Rye	6,735	1,571	122	...	643	667	9,738
Other Cereals ...	...	...	24	...	...	134	158
Potatoes ...	36,815	55,372	8,031	9,894	2,264	34,305	146,681
Onions	422	4,705	88	...	54	109	5,378
Other Root Crops	327	2,073	3,632	...	120	5,994	12,146
Hay	458,072	621,139	64,498	295,895	149,830	64,965	1,654,399
Green Forage ...	122,893	36,502	50,513	17,985	3,265	5,326	236,484
Grass Seed ...	...	1,859	1,131	...	...	3,720	6,710
Sugar Cane—							
Productive ...	10,378	...	98,194	...	...	...	108,572
Unproductive ...	10,223	...	35,090	...	...	...	45,313
Vines—							
Productive ...	7,853	23,368	1,788	19,753	3,160	...	55,922
Unproductive ...	668	2,487	282	2,822	365	...	6,624
Tobacco... ...	601	133	666	...	...	...	1,400
Hops	...	323	...	...	...	921	1,244
Orchards and other Fruit Gardens...	46,177	54,021	13,310	18,199	12,517	18,050	162,274
Market Gardens ...	9,550	7,906	1,953	8,379	3,789	2,210	33,787
All other Crops ...	11,041	3,354	16,213	3,151	1,544	1,245	36,548
Total Area ...	2,826,657	3,303,586	559,753	2,150,291	460,825	244,744	9,545,856

2. **Relative Areas of Crops in States.**—Taking the principal crops, *i.e.*, those in the case of which the cultivation amounts to more than 100,000 acres in the Commonwealth, the proportion of each in the various States to the total area under crop was as follows:—

PROPORTION OF TOTAL CULTIVATED AREA UNDER CHIEF CROPS, 1906-7.

Crop.	N.S.W.	Victoria.	Qsl'd.	S. Aust.	W. Aust.	Tas.	C'wealth.
	%	%	%	%	%	%	%
Wheat	66.02	61.51	20.47	78.22	54.31	13.40	62.62
Hay	16.21	18.80	11.52	13.76	32.51	26.54	17.33
Oats	2.00	11.52	0.22	2.65	6.16	23.83	6.10
Maize	6.16	0.35	24.98	...	0.02	...	3.42
Green Forage ...	4.35	1.11	9.02	0.84	0.71	2.18	2.48
Orchards and Fruit Gardens	1.63	1.64	2.38	0.85	2.72	7.37	1.70
Potatoes	1.30	1.68	1.43	0.46	0.49	14.02	1.54
Sugar Cane... ...	0.73	...	23.81	...	...	...	1.61
Barley	0.28	1.61	1.54	1.31	0.78	2.18	1.11
All Other	1.32	1.78	4.63	1.91	2.30	10.48	2.10
Total ...	100.00	100.00	100.00	100.00	100.00	100.00	100.00

As the table shews, considerably more than half the total cultivated area of the Commonwealth is under wheat.

3. **Acreage of principal Crops, Commonwealth.**—The acreage devoted to each of the principal crops in the whole Commonwealth during the last sexennium is shewn below :—

ACREAGE OF CHIEF COMMONWEALTH CROPS, 1901-2 TO 1906-7.

Crops.	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Wheat	5,115,965	5,156,049	5,566,340	6,269,778	6,122,746	5,977,794
Hay	1,688,402	1,590,488	1,853,864	1,367,321	1,574,412	1,654,399
Oats	461,430	592,247	620,856	493,317	466,567	581,843
Maize	294,849	303,375	371,906	324,265	314,901	325,581
Green Forage ...	204,988	210,641	159,884	179,603	225,879	236,484
Orchards and Fruit Gardens ...	145,281	146,675	154,254	158,604	159,724	162,274
Sugar Cane ...	132,840	105,498	131,698	141,842	155,912	153,885
Potatoes ...	109,685	116,521	116,112	116,707	118,533	146,681
Barley	74,511	76,260	121,088	113,207	90,945	106,436
Vineyards ...	63,677	63,943	65,463	65,673	64,344	62,546
All other Crops ...	122,426	110,854	140,320	134,705	139,492	137,933
Total ...	8,414,054	8,472,551	9,301,785	9,365,022	9,433,455	9,545,856

Wheat, of course, is the chief Australian crop, and, despite the drawbacks incidental to unfavourable seasons, the cultivation has considerably increased during the period covered by the above table. Oats shews an increase of 120,000 acres, barley of 32,000, and maize of nearly 31,000 acres. Separate sections will be devoted to a consideration of the more important crops.

§ 4. Wheat.

1. **Progress of Wheat-Growing.**—(i.) *Acreage.* The area under wheat for grain is given below for each State at various periods since 1860, and is shewn diagrammatically in the graph hereinafter :—

AREA UNDER WHEAT, 1860-1 TO 1906-7.

Season.	N.S.W.	Victoria.	Q'sland.	Sth. Aust.	West Aust.	Tasmania.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1860-1	128,829	161,252	196	273,672	13,584	66,450	643,983
1865-6	131,653	178,628	2,068	410,608	22,249	73,270	818,476
1870-1	147,997	284,167	2,892	604,761	26,640	57,382	1,123,839
1875-6	133,609	321,401	4.478	898,820	21,561	42,745	1,422,614
1880-1	253,138	977,285	12,632	1,733,542	27,686	50,022	3,054,305
1885-6	264,867	1,020,082	10,093	1,922,555	29,511	30,266	3,277,374
1890-1	333,233	1,145,163	10,390	1,673,573	33,820	32,452	3,228,631
1895-6	596,684	1,412,736	27,090	1,649,929	23,241	64,652	3,774,332
1900-1	1,530,609	2,017,321	79,304	1,913,247	74,308	51,825	5,666,614
1901-2	1,392,070	1,754,417	87,232	1,743,452	94,710	44,084	5,115,965
1902-3	1,279,760	1,994,271	1,880	1,746,842	92,398	40,898	5,156,049
1903-4	1,561,111	1,968,599	138,096	1,711,174	137,946	49,414	5,566,340
1904-5	1,775,955	2,277,537	150,958	1,840,157	182,080	43,091	6,269,778
1905-6	1,939,447	2,070,517	119,356	1,757,036	195,071	41,319	6,122,746
1906-7	1,866,253	2,031,893	114,575	1,681,982	250,283	32,808	5,977,794

(ii.) *Yield.* The production during the same period for each State and for the Commonwealth as a whole is given below :—

PRODUCTION OF WHEAT, 1860-1 TO 1906-7.

Season.	N.S.W.	Victoria.	Q'nsland.	Sth. Aust.	W. Aust.	Tasmania.	C'wealth.
	Bushels.[1]	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1860-1	1,581,598	3,459,914	3,136	3,576,593	208,332	1,415,896	10,245,469
1865-6	1,013,863	3,514,227	33,088	3,587,800	231,594	1,273,766	9,654,338
1870-1	999,595	2,870,409	39,787	6,961,164	316,769	896,881	12,084,605
1875-6	1,958,640	4,978,914	97,400	10,739,834	237,171	700,092	18,712,051
1880-1	3,717,355	9,727,369	223,243	8,606,510	332,232	750,040	23,356,749
1885-6	2,733,133	9,170,538	51,598	14,612,876	339,376	524,348	27,431,869
1890-1	3,649,216	12,751,295	207,990	9,399,389	467,389	642,980	27,118,259
1895-6	5,195,312	5,669,174	123,630	5,929,300	188,077	1,164,855	18,270,348
1900-1	16,173,771	17,847,321	1,194,088	11,253,148	774,653	1,110,421	48,353,402
1901-2	14,808,705	12,127,382	1,692,222	8,012,762	956,886	963,662	38,561,619
1902-3	1,585,097	2,569,364	6,165	6,354,912	985,559	876,971	12,378,068
1903-4	27,334,141	28,525,579	2,436,799	13,209,465	1,876,252	767,398	74,149,634
1904-5	16,464,415	21,092,139	2,149,663	12,023,172	2,013,237	792,956	54,535,582
1905-6	20,737,200	23,417,670	1,187,321	20,143,798	2,308,305	776,478	68,520,772
1906-7	21,817,938	22,618,043	1,108,902	17,145,796	2,758,567	651,408	66,100,654

[1] Following the usual practice, the unit "bushel" has been used.

(iii.) *Average Yields.* In the next table will be found the average yield of wheat per acre in each of the last six seasons :—

YIELD OF WHEAT PER ACRE, 1901-2 TO 1906-7.

Season.	N.S.W.	Victoria.	Q'nsland.	Sth. Aust.	W. Aust.	Tasmania.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1901-2	10.64	6.91	19.40	4.60	10.10	21.86	7.54
1902-3	1.24	1.29	3.28	3.64	10.67	21.44	2.40
1903-4	17.51	14.49	17.65	7.72	13.60	15.53	13.32
1904-5	9.27	9.26	14.24	6.53	11.06	18.40	8.70
1905-6	10.69	11.31	9.53	11.46	11.83	18.79	11.19
1906-7	11.69	11.13	9.68	10.19	11.02	19.86	11.06

As the above figures shew, there were remarkable variations in the average yields, chiefly of course due to the vagaries of the season. The year 1902 was an especially lean one in all the States except Western Australia and Tasmania. A large proportion of the area sown with wheat had to be ploughed in or else fed off by stock, but the comparatively heavy yields in the succeeding year shew that this additional cultivation was very beneficial.

2. **Australian and Foreign Wheat Yields.**—In the next table, will be found a statement of the average return per acre in the principal wheat-growing countries of the world. The figures are, wherever possible, based on the average of the latest available quinquennial or triennial periods.

The average for New Zealand over a period of years was 32.42 bushels per acre, but the acreage sown is comparatively small, amounting in 1906 to only 206,000 acres.

In order to draw any useful comparisons from the figures quoted above several important factors have to be taken into account, such as relative rent or purchase-money for agricultural areas in the various countries, cost of cultivation generally, and expenses of marketing the product.

AVERAGE YIELDS OF WHEAT IN VARIOUS COUNTRIES.

Country	Average yield in bushels per acre.	Country.	Average yield in bushels per acre.
United Kingdom	30.85	Spain	12.98
Germany	28.24	Italy	12.75
Ontario (Canada)	20.42	India	11.45
France	19.22	Argentine...	10.65
Saskatchewan (Canada) ...	19.09	Caucasia (Russia)	10.53
Manitoba (Canada)	18.90	Siberia ,, ...	9.83
Hungary	17.54	Russia in Europe	9.68
Austria	17.34	**Australia**	**9.19**
Rumania	16.24	Algeria	9.07
United States	13.07		

3. **Wheat Crop of the World.**—According to "Beerbohm's," the wheat crop of the world during the last four years was as follows :—

THE WHEAT CROP OF THE WORLD[1].

Country.	1903.	1904.	1905.	1906.	Country.	1903.	1904.	1905.	1906.
	1,000 Qrs.	1,000 Qrs.	1,000 Qrs.	1,000 Qrs.		1,000 Qrs.	1,000 Qrs.	1,000 Qrs.	1,000 Qrs.
Austria	5,750	5,000	5,750	7,000	Algeria	4,250	3,550	2,700	4,350
Hungary... ...	21,700	18,300	21,500	25,900	Tunis	1,200	1,200	750	1,250
Belgium	1,500	1,750	1,500	1,750	Argentine Republic	15,500	19,500	17,500	19,500
Bulgaria... ...	4,500	5,250	3,750	5,150	Australasia ...	10,100	7,900	9,500	10,000
Denmark ...	500	510	500	500	Asia Minor ...	4,250	4,500	5,000	5,000
France	45,600	37,400	42,000	41,000	Canada	9,750	8,500	13,000	14,000
Germany ...	16,500	17,500	17,000	18,000	Cape Colony ...	500	550	500	500
Greece	750	750	750	750	Chile	1,700	2,000	1,550	1,750
Holland	750	750	750	750	Egypt	1,500	1,500	1,500	1,000
Italy	22,000	21,000	20,000	20,000	India	36,750	44,700	35,000	40,000
Portugal... ...	650	350	500	500	Persia	3,000	3,000	3,500	3,500
Rumania ...	9,400	6,750	12,750	13,600	Syria	3,000	2,500	2,500	3,000
Russia	76,500	82,000	79,000	63,000	U.S. America ...	77,000	66,000	85,000	91,000
Servia	1,500	1,500	1,400	1,850	Uruguay	1,000	950	750	1,000
Spain	12,500	12,000	10,000	15,000	Mexico	1,550	1,100	750	1,000
Sweden	670	700	620	800	Japan	8,125	11,600	10,000	12,000
Switzerland ...	500	450	500	500					
Turkey (Europe)...	5,000	4,500	5,000	5,000					
United Kingdom	6,000	4,750	7,550	7,580	Total out of Europe	179,175	179,050	189,500	208,850
Total for Europe...	232,270	221,210	230,820	228,630	Grand total ...	411,445	400,260	420,320	437,480

1. In quarters of 480lb. Add 000 to the figures in columns for number of quarters.

The figures given for Australasia in the above total are considerably overstated for the year 1906, the actual return being about 8,964,000 quarters as against 10,000,000 quoted in the table. Taking the average of the four years the yield of wheat in the Commonwealth constitutes about 2 per cent. of the world's production.

4. **Prices of Wheat.**—(i.) *British.* As the United Kingdom is the largest importer of wheat, the price of the cereal in the British markets naturally has a considerable influence on the price in the local markets, especially since the position of Australia as an exporting country became assured. The table below gives the average price per Imperial quarter of British wheat at various intervals since 1861, together with the highest and lowest weekly average :—

PRICES OF BRITISH WHEAT, 1861-1906.

Year.	Average for Year.	Highest Weekly Average.	Lowest Weekly Average.	Year.	Average for Year.	Highest Weekly Average.	Lowest Weekly Average.
	s. d.	s. d.	s. d.		s. d.	s. d.	s. d.
1861 ...	55 4	61 6	50 0	1902 ...	28 1	31 8	24 10
1871 ...	56 8	60 0	52 6	1903 ...	26 9	30 3	24 11
1881 ...	45 4	55 2	40 9	1904 ...	28 4	30 6	26 3
1891 ...	37 0	41 8	32 3	1905 ...	29 8	32 3	26 8
1901 ...	26 9	27 8	25 8	1906 ...	28 3	30 9	25 9

(ii.) *Australian.* Generally speaking, Australian wheat shews a grain of bright clear texture, rich in gluten, and of fine milling quality. Its excellence is attested by the high price which it realises in the Home markets. The statement below shews, for the last three years, the average value per Imperial quarter of the wheat imported into the United Kingdom from the chief producing countries:—

AVERAGE PRICE OF FOREIGN WHEAT IMPORTED INTO THE UNITED KINGDOM, 1904-6.

Country.	Average Price per Imperial Quarter.			Country.	Average Price per Imperial Quarter.		
	1904.	1905.	1906.		1904.	1905.	1906.
	s. d.	s. d.	s. d.		s. d.	s. d.	s. d.
Argentine ...	30 1	30 7	29 10	Turkey ...	25 4	28 1	28 11
Bulgaria ...	28 7	29 4	27 5	United States—			
Chile	30 8	30 4	...	Atlantic Coast	30 7	31 9	30 7
Germany ...	31 2	31 11	27 7	Pacific Coast ...	30 9	31 7	30 11
Rumania ...	29 5	31 0	28 11	Canada ...	30 10	31 8	30 8
Russia—				British India ...	28 7	29 8	29 4
Northern Ports	30 9	31 2	28 6	New Zealand ...	29 7	30 1	32 2
Southern Ports	30 9	31 9	29 10	**Australia** ...	**31 4**	**32 4**	**31 2**

In the next table will be found a statement of the export price of Australian wheat during each of the last six years:—

EXPORT PRICE OF AUSTRALIAN WHEAT, 1901-6.

Year.	1901.	1902.	1903.	1904.	1905.	1906.
Price per bushel ...	2s. 9d.	3s. 1d.	3s. 1d.	3s. 2d.	3s. 5d.	3s. 8d.

Export price is defined in the Customs' returns as value in the principal markets of the Commonwealth.

5. **Exports of Wheat and Flour.**—(i.) *Quantities.* The table hereunder shews the imports, exports, and net exports of wheat and flour during each year of the period 1901-6. For the sake of convenience flour has been expressed at its equivalent in wheat, one ton of flour being taken as equal to 50 bushels of grain:—

IMPORTS AND EXPORTS OF WHEAT AND FLOUR, COMMONWEALTH, 1901-6.

Year.	Imports.			Exports.			Net Exports.
	Wheat.	Flour.	Total.	Wheat.	Flour.	Total.	
	Bushels.	Eq. Bshl.[1]	Bushels.	Bushels.	Eq. Bshl.	Bushels.	Bushels.
1901	22,992	302,550	325,542	20,260,058	4,840,700	25,100,758	24,775,216
1902	176,133	553,650	729,783	8,999,282	1,659,150	10,658,432	9,928,649
1903	9,144,490	3,493,450	12,607,940	1,530,143	402,500	1,932,643	—10,675,297[2]
1904	618	58,200	58,818	33,346,066	5,247,500	38,593,566	38,534,748
1905	258	55,550	55,808	24,648,182	7,715,850	32,364,032	32,308,224
1906	745	43,800	44,545	30,262,335	8,344,050	38,606,385	38,561,840

1. Equivalent bushels. 2. — Denotes net imports.

As shewn above, the Commonwealth had to import over 12,500,000 bushels of wheat and flour during 1903, this being necessitated by the failure of the crop in the preceding season. The principal sources of supply were the United States, which contributed 5,000,000 bushels of wheat and 56,000 tons of flour, the Argentine which sent 3,000,000 bushels of wheat and 2000 tons of flour, and Canada which sent 57,000 bushels of wheat in addition to 11,000 tons of flour. Wheat to the extent of 134,000 bushels was obtained from India, while Brazil furnished 122,000 bushels.

(ii.) *Destination of Exported Breadstuffs.* In the next two tables will be found the principal countries to which the Commonwealth exported wheat and flour during each year of the period 1901-6. The countries are as shewn in the Australian Customs returns, but owing to the fact that wheat ships are frequently instructed to call for orders at various African ports, some of these African countries cannot be properly considered as the ultimate destination of the whole of the wheat said to be exported to them. Wheat and flour are shewn separately for reasons that will be alluded to later on.

EXPORTS OF WHEAT FROM THE COMMONWEALTH, 1901-6.

Country to which Exported.	1901.	1902.	1903.	1904.	1905.	1906.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
United Kingdom	10,821,975	7,343,019	1,134,496	27,176,293	16,910,892	20,138,149
Cape Colony ...	2,983,215	1,329,352	254,232	4,587,759	3,783,657	4,017,233
India ...	297,159	245	...	...	283	437,317
Natal ...	232,456	32,553	43,486	381,602	238,797	145,995
Other Brit. Pos.	2,515	2,412	264	42,208	28,281	168,079
Canary Islands...	...	...	...	...	323,882	327,255
Chile	1,102,395	...	...	138,567	382,377	2,212,410
Egypt ...	258,521	...	...	16,972	...	161,470
Italy	43,821	...	...	...	11,040	208,528
New Caledonia...	115,088	58,774	952	69,555	128,893	60,563
Peru	162,796	...	71,743	446,616	1,213,877	1,244,112
Spain ...	...	...	...	...	809,635	864,367
Total Exports	20,260,058	8,999,282	1,530,143	33,346,066	24,647,998	30,262,335

The exports of flour during the same period, and the principal countries of destination, were as follows:—

EXPORTS OF FLOUR FROM THE COMMONWEALTH, 1901-6.

Country to which Exported.	1901.	1902.	1903.	1904.	1905.	1906.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
United Kingdom ...	27,625	822	105	52,114	54,019	26,796
Cape Colony	13,919	9,465	7	9,031	17,212	13,722
Hong Kong	725	191	23	419	10,269	20,456
Natal	21,338	7,704	1,306	19,642	23,910	24,358
Straits Settlements ...	2,050	520	104	842	7,680	17,608
Japan	1,117	10	270	730	1,555	4,793
Java	13,170	6,501	2,323	8,360	11,890	15,021
New Caledonia ...	2,994	2,784	1,979	2,974	3,030	3,613
Philippine Islands ...	620	400	32	1,163	6,442	12,126
Portuguese East Africa ...	524	155	...	3,193	4,410	11,139
Total Exports ...	96,814	33,183	8,050	104,948	154,317	166,881

(iii.) *Disadvantages of Wheat Export.* From the above returns it will be seen that the export of flour from Australia is, in comparison with wheat, quite insignificant. This overwhelming preponderance of wheat export calls for comment. A recent calculation places the value of the phosphoric acid sent away from Australia in the form of wheat grain as exceeding £100,000 annually. Of course the obvious way to prevent this loss would be to substitute the export of the wheaten flour for the export of the wheat grain itself. While Australian wheat commands the highest price in the home markets, however, there does not appear to be any striking predilection in favour of the Australian-made flour, this of course being chiefly due to the fact that the importing countries find it advantageous to have the disposal of the wheat offal.

More exactly the proportions of milled product from a bushel (60 lbs.) of wheat are, approximately, as follows:—Flour, 42 lbs.; bran, 9 lbs.; pollard, 9 lbs. The average percentage of phosphoric acid in these products is as follows:—

Flour	0.32 per cent., or	0.13 lbs. per bushel.
Bran	3.00 „	0.27 „
Pollard	0.90 „	0.08 „

The total amount of phosphoric acid contained in a bushel of wheat is, therefore, 0.48 lbs., of which 0.13 lbs. is in the flour and 0.35 lbs. in the offal.

The market value of phosphoric acid as a fertiliser is about three halfpence per lb. In an export of 30,262,335 bushels of wheat the value of the phosphoric acid will, therefore, be £90,787, of which £24,588 is in the flour and £66,199 in the bran and pollard. The price for which the offal can be sold locally will probably be the determining factor with the millers in deciding whether to export wheat or flour.[1]

6. **Value of the Wheat Crop.**—The estimated value of the wheat crop in each State and in the Commonwealth during the season 1906-7 is shewn below :—

VALUE OF THE WHEAT CROP, 1906-7.

State.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'w'lth.
	£	£	£	£	£	£	£
Value of wheat crop	3,522,680	3,109,980	194,058	2,357,547	471,225	122,139	9,777,629
Average value per acre under cultivation	£1/17/9	£1/10/7	£1/13/10	£1/8/0	£1/17/8	£3/14/5	£1/12/9

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[1] The above estimates are furnished on the authority of F. B. Guthrie, Esquire, F.C.S., etc., Chemist to the Department of Agriculture, New South Wales.

§ 5. Oats.

1. **Progress of Cultivation.**—Oats come next in importance to wheat amongst the cereal crops cultivated last season, but while wheat accounted for nearly 63 per cent., oats represented only 6 per cent. of the area under crop in the Commonwealth. The progress of cultivation since 1860 is shewn in the table hereunder, and more fully in the graphs hereinafter:—

CULTIVATION OF OATS, 1860-1 TO 1906-7.

Season.	N.S.W.	Victoria.	Q'nsland.	S. Aust.	W. Aust.	Tas.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1860-1... ...	6,535	86,337	7	2,273	507	30,303	125,962
1865-6... ...	10,939	102,817	348	2,872	1,232	28,538	146,746
1870-1... ...	10,683	149,309	122	6,188	2,095	30,946	199,343
1875-6... ...	18,856	124,100	114	3,640	1,256	32,556	180,522
1880-1... ...	17,923	134,089	116	4,355	1,319	19,853	177,655
1885-6... ...	14,117	215,994	208	7,871	1,596	29,247	269,033
1890-1... ...	14,102	221,048	411	12,475	1,934	20,740	270,710
1895-6... ...	28,750	255,503	922	34,098	1,880	32,699	348,852
1900-1... ...	29,383	362,689	385	27,988	4,790	45,073	470,308
1901-2... ...	32,245	329,150	1,535	34,660	9,751	54,089	461,430
1902-3... ...	42,992	433,489	78	50,296	10,334	55,058	592,247
1903-4... ...	51,621	433,638	2,808	57,558	14,568	60,663	620,856
1904-5... ...	40,471	344,019	643	50,630	13,864	43,690	493,317
1905-6... ...	38,543	312,052	533	56,950	15,713	42,776	466,567
1906-7... ...	56,431	380,493	1,236	57,000	28,363	58,320	581,843

2. **Total Yield.**—The total oat crop of the several States for the same period is furnished in the following table:—

COMMONWEALTH OAT CROP.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1860-1 ...	98,814	2,633,693	91	52,989	11,925	926,418	3,723,930
1865-6 ...	116,005	2,279,468	4,524	42,642	19,005	688,740	3,150,384
1870-1 ...	119,365	2,237,010	1,586	88,383	39,974	691,250	3,177,568
1875-6 ...	352,966	2,719,795	1,482	60,749	18,840	827,043	3,980,835
1880-1 ...	356,121	2,362,425	2,081	50,070	21,104	439,446	3,231,247
1885-6 ...	279,107	4,692,303	1,006	97,201	23,142	784,325	5,877,084
1890-1 ...	256,659	4,919,325	8,967	116,229	38,791	519,395	5,859,366
1895-6 ...	374,196	2,880,045	10,887	184,012	19,326	906,934	4,375,400
1900-1 ...	593,548	9,582,332	7,855	366,229	86,433	1,406,913	12,043,310
1901-2 ...	687,179	6,724,900	42,208	469,254	163,654	1,702,659	9,789,854
1902-3 ...	351,758	4,402,982	520	620,823	167,882	1,752,745	7,296,710
1903-4 ...	1,252,156	13,434,952	70,713	902,936	258,508	1,621,950	17,541,210
1904-5 ...	652,646	6,203,429	15,137	555,696	226,318	1,178,819	8,832,045
1905-6 ...	883,081	7,232,425	5,858	869,146	283,987	1,200,024	10,474,521
1906-7 ...	1,404,554	8,845,654	28,884	896,166	457,155	1,979,574	13,611,987

The principal oat-growing State of the Commonwealth is Victoria. During the past seven seasons it has produced more than 70 per cent. of the total quantity of oats grown in the Commonwealth; Tasmania, New South Wales, and South Australia come next in order of importance. In Tasmania, New South Wales, and Western Australia, the highest production of oats for any season was that of 1906-7, while Victoria, South Australia, and Queensland experienced a maximum yield in 1903-4. For the Commonwealth as a whole the yield of 13,611,987 bushels of oats in 1906-7 has only once been exceeded, viz., in the record year 1903-4 when the total reached was 17,541,210 bushels.

3. **Average Yield.**—The average yield per acre of the oat crop of the Commonwealth varies considerably in the different States, being highest in Tasmania and lowest in South Australia. Particulars as to average yield for the past six seasons are given in the succeeding table:—

AVERAGE YIELD OF OATS PER ACRE.

Season.	N.S.W.	Victoria.	Q'nsland.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1901-2 ...	21.31	20.43	27.50	13.54	16.78	31.48	21.22
1902-3 ...	8.18	10.16	6.67	12.34	16.25	31.83	12.32
1903-4 ...	24.26	30.98	25.18	15.69	17.74	26.74	28.25
1904-5 ...	16.13	18.03	23.54	10.98	16.32	26.98	17.90
1905-6 ...	22.91	23.18	10.99	15.26	18.07	28.05	22.45
1906-7 ...	24.89	23.25	23.37	15.72	16.12	33.94	23.39

It will be seen that as in the case of the wheat crop, the smallest average yield per acre for the Commonwealth for the period was that experienced in the season 1902-3, while the largest was that of the succeeding season.

4. **Value of Oat Crop.**—The estimated value of the oat crop of the several States of the Commonwealth for the season 1906-7 is as follows:—

VALUE OF OAT CROP, 1906-7.

State.	N.S.W.	Victoria.	Q'sland.	Sth Aust.	West Aus.	Tas.	C'wealth.
Aggregate Value ...	£169,720	£810,851	£4,573	£82,148	£68,573	£230,950	£1,366,815
Value per Acre ...	£3/0/2	£2/2/7	£3/14/0	£1/8/10	£2/8/4	£3/19/2	£2/7/0

5. **Imports and Exports.**—The production of oats in the Commonwealth has not yet reached such a stage as to admit of a regular export trade in this cereal; in fact in certain years the imports have exceeded the exports, notably in 1903 and 1906. The quantities and values of oats imported into and exported from the Commonwealth during the six years 1901 to 1906 are given hereunder:—

COMMONWEALTH IMPORTS AND EXPORTS OF OATS, 1901 TO 1906.

Year.	Imports.		Exports.		Net Exports.*	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Bushels.	£	Bushels.	£	Bushels.	£
1901	1,526,599	153,674	2,874,334	285,347	1,347,735	131,673
1902	1,037,596	157,981	1,427,620	181,450	390,024	23,469
1903	2,066,365	229,395	184,823	23,305	—1,881,542	— 206,090
1904	185,652	15,921	1,713,578	115,659	1,527,926	99,738
1905	392,400	45,460	882,740	83,479	490,340	38,019
1906	215,330	27,445	154,063	18,559	— 61,267	— 8,886

* — Signifies net imports.

The principal country from which the Commonwealth imports of oats are obtained is the Dominion of New Zealand, while the principal country to which oats were exported during the period under review were the South African colonies in the earlier, and the United Kingdom in the later years.

6. **Oatmeal, &c.**—In addition to the locally manufactured oatmeal, importations take place principally from the United Kingdom, the United States and Canada. The

total importations of groats, oatmeal, wheatmeal, and rolled oats during 1906 amounted to 1,246,657 lbs., and represented a value of £18,226.

7. **Comparisons with other Countries.**—A comparison of the Australian production of oats with that of the leading oat-producing countries of the world, is furnished in the following table:—

PRODUCTION OF OATS IN VARIOUS COUNTRIES, 1905.

Country.	Quantity of Oats produced	Country.	Quantity of Oats produced	Country.	Quantity of Oats produced.
	Bushels.		Bushels.		Bushels.
United States ...	923,428,192	Austria ...	107,850,696	Rumania ...	18,387,320
Russian Empire	766,139,080	Ontario ...	105,563,568	Spain ...	18,251,240
Germany ...	369,961,288	Sweden ...	59,466,824	New Zealand	12,707,982
France	273,907,032	Manitoba ...	45,484,024	**Australia** ...	**10,474,521**
United Kingdom	166,286,492	Saskatchewan	19,213,056		

8. **Comparison of Yields.**—The average yield per acre of oats in Australia is a somewhat lower one compared with the results obtained in other countries, where the cultivation of this cereal is more extensively carried on. Arranging the countries contained in the foregoing table according to the magnitude of the average yield of oats for a period of five years, the results are as follows:—

AVERAGE YIELD PER ACRE.

Country.	Average per Acre.	Country.	Average per Acre.	Country.	Average per Acre.
	Bshl.		Bshl.		Bshl.
United Kingdom...	41.09	Saskatchewan ...	32.73	Rumania... ...	21.11
New Zealand ...	39.56	United States ...	29.14	**Australia**... ...	**20.47**
Germany	39.39	Sweden	28.73	Spain	16.37
Ontario	38.61	France	26.60	Russia	16.19
Manitoba	38.54	Austria	22.41		

9. **Interstate Trade.**—Particulars concerning the interstate trade in oats are contained in the following table. These shew that Victoria and Tasmania are the largest exporters, while New South Wales and Western Australia are the largest importers of oats:—

INTERSTATE TRADE IN OATS, 1906.

State.	Imports from Other States of the Commonwealth.		Exports to Other States of the Commonwealth.		Net Interstate Exports.*	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Bushels.	£	Bushels.	£	Bushels.	£
New South Wales ...	633,178	77,051	30,250	3,940	—602,928	—73,111
Victoria	43,102	5,142	912,682	107,256	869,580	102,114
Queensland ...	70,785	8,954	148	19	— 70,637	— 8,935
South Australia ...	18,835	2,134	135,795	15,865	116,960	13,731
Western Australia ...	627,573	71,699	...	...	—627,573	—71,699
Tasmania	76,590	8,904	391,188	46,804	314,598	37,900

* — Signifies net imports.

10. **Price of Oats.**—The average wholesale prices of oats in the Melbourne market for each of the years 1903 to 1906 are given in the following table:—

AVERAGE WHOLESALE PRICE PER BUSHEL.

Year	1903.	1904.	1905.	1906.
	s. d.	s. d.	s. d.	s. d.
Algerian oats	2 5	1 3	1 10	2 4
White oats	2 8	1 11	2 7	2 8

§ 6. Maize.

1. **States Growing Maize.**—The only States in which maize is at all extensively grown for grain are those of New South Wales and Queensland, the area so cropped in these two States during the season 1906-7 being 313,921 acres, or more than 96 per cent. of the total for the Commonwealth. Of the balance, Victoria contributed 11,559 acres and Western Australia 101 acres. The climate of Tasmania prevents the growing of maize for grain in that State, while in South Australia the area is so small that the particulars are not specially asked for on the form used in the collection of agricultural statistics. In all the States maize is grown to a greater or less extent as green forage, particularly in connection with the dairying industry.

2. **Area under Maize.**—The area devoted to the growing of maize for grain in each State, with the total for the Commonwealth, from 1875 onwards is as follows:—

AREA UNDER MAIZE, STATES AND COMMONWEALTH, 1875-6 TO 1906-7.

Season.	N.S.W.	Victoria.	Queensland.	West Aust.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.
1875-6	117,582	2,346	38,711	60	158,699
1880-1	127,196	1.769	44,109	32	173.106
1885-6	132,709	4,530	71.741	120	209,100
1890-1	191,152	10,357	99,400	81	300,990
1895-6	211,104	7,186	100,481	23	318,794
1900-1	206,051	9,389	127,974	91	343,505
1901-2	167,333	10.020	116,983	513	294,849
1902-3	202,437	10.906	89,923	109	303,375
1903-4	226,834	11,810	133,099	163	371,906
1904-5	193,614	11,394	119,171	86	324,265
1905-6	189,353	11,785	113,720	43	314,901
1906-7	174.115	11.559	139.806	101	325.581

The actual fluctuations from year to year are shewn more fully on the graph hereinafter.

The total area under maize in the Commonwealth exceeded 300,000 acres for the first time in the season 1890-1, and although it has fluctuated somewhat since then, it may be considered to have remained practically stationary at about that figure. The greatest divergence occurred in 1903-4, when a record total of 371,906 acres was harvested. The area cropped with maize appears to be on the decline in New South Wales, the maximum cropping being that of 1903-4, while each subsequent season furnished a smaller area than the preceding. In Queensland, on the other hand, the area is on the increase, and that for 1906-7 is the highest yet attained. The area under maize in New South Wales in 1906-7 represents a little more than 6 per cent. of that State's total area under crop, while in the case of Queensland the maize crop amounts to almost 25 per cent. of the total.

3. **Total Yield.**—Notwithstanding the fact that the area under maize in the Commonwealth for 1906-7 fell considerably short of that for some of the previous seasons the

1906-7 production established a record, the total attained being 10,172,154 bushels. Only once previously had a total exceeding ten millions been reached, viz., in the season 1897-8, when 10,036,083 bushels were harvested. Particulars concerning the yield from 1875 onwards are as hereunder :—

MAIZE CROP, STATES AND COMMONWEALTH, 1875-6 to 1906-7.

Season.	N.S.W.	Victoria.	Queensland.	W. Aust.	C'wealth.
	Bushels	Bushels.	Bushels.	Bushels.	Bushels.
1875-6	3,410,517	37,177	1,006,486	1,200	4,455,380
1880-1	4,518,897	49,299	1,409,607	896	5,978,699
1885-6	4,336,163	181,240	1,574.294	1,417	6,093,114
1890-1	5,713,205	574,083	2,373,803	1,526	8,662,617
1895-6	5,687,030	351,891	2,391,878	600	8,430,899
1900-1	6,292,745	604,180	2,456,647	1,399	9,354,971
1901-2	3,844,993	615,472	2,569,118	5,203	7,034,786
1902-3	3,049,269	750,524	1,033,329	2,110	4,835,232
1903-4	6,836,740	904,239	1,923,623	2,487	9,667,089
1904-5	4,951,132	623,736	2,542,766	896	8,118,530
1905-6	5,539,750	641,216	2,164,674	428	8,346,068
1906-7	5,763,000	704,961	3,703,274	919	10,172,154

4. **Average Yield.**—In the following table particulars are given of the average yield per acre of the maize crops of the several States for the six seasons, 1901-2 to 1906-7:—

AVERAGE YIELD OF MAIZE PER ACRE, COMMONWEALTH AND STATES, 1901-2 to 1906-7.

Season.	N.S.W.	Victoria.	Queensland	W. Aust.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1901-2	22.98	61.42	21.96	10.16	23.86
1902-3	15.06	68.82	11.49	19.36	15.94
1903-4	30.14	76.57	14.45	15.26	25.99
1904-5	25.57	54.74	21.34	10.42	25.04
1905-6	29.26	54.41	19.04	9.95	26.50
1906-7	33.10	60.99	26.49	9.10	31.24

The extraordinarily high average yield obtained in Victoria is due, in large measure, to the fact that the area under maize in that State is comparatively small and is situated in districts that are peculiarly suited to the production of this grain. The yield in New South Wales is appreciably higher than that obtained in Queensland.

5. **Value of Maize Crop.**—The value of the Commonwealth maize crop for the season 1906-7 has been estimated at £1,326,071, made up as follows:—

VALUE OF MAIZE CROP, 1906-7.

State	New South Wales.	Victoria.	Queensland.	Western Australia.	Commonwealth.
Aggregate value	£792,400	£70,496	£462,922	£253	£1,326,071
Value per acre	£4 11/0	£6 2/0	£3 6/3	£2 10/1	£4 1/6

6. **Imports and Exports.**—Except in the years 1902 and 1903, when, owing to the severe drought experienced in Australia, many of the maize crops failed, the Commonwealth trade in maize has been practically insignificant. In the former of the years mentioned nearly two million, and in the latter considerably more than a million bushels were imported. Details of the imports and exports for the past six years are as follows:—

COMMONWEALTH IMPORTS AND EXPORTS OF MAIZE, 1901-6.

Year.	Imports.		Exports.		Net Exports.*	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Bushels.	£	Bushels.	£	Bushels.	£
1901 ...	188,423	24,764	543	75	— 187,890	— 24,689
1902 ...	1,910,587	319,859	1,450	351	— 1,909,137	— 319,508
1903 ...	1,346,702	204,484	17,296	2,749	— 1,329,406	— 201,735
1904 ...	35,096	3,018	48,109	5,421	13,013	2,403
1905 ...	9,785	1,922	7,033	985	— 2,752	— 937
1906 ...	24,727	3,243	63,168	9,256	38,441	6,013

* — Signifies net imports.

The principal countries to which maize has been exported from the Commonwealth are South Africa and New Zealand, while the principal countries from which importations have taken place are the Argentine Republic, New Zealand, the United States, and the New Hebrides.

7. **Prepared Maize.**—A fairly large quantity of maizena and corn-flour is imported annually into the Commonwealth, the principal countries of supply being the United Kingdom and the United States. During the year 1906 these importations amounted to 1,857,937 lbs., and represented a value of £20,092.

8. **Maize-growing in Other Countries.**—The world's production of maize for the year 1906 has been estimated at 3,520,000,000 bushels, and of this amount the United States of America was responsible for 2,840,000,000, or slightly more than 80 per cent. The other leading maize-producing countries of the world are Mexico, the Argentine Republic, India, Italy, and Austria-Hungary..

9. **Interstate Trade in Maize.**—In addition to being the largest producer of maize in the Commonwealth, New South Wales is also the largest importer from the other States. Particulars of the Interstate imports and exports are contained in the table given hereunder:—

INTERSTATE TRADE IN MAIZE, 1906.

State.	Imports from other States of the Commonwealth		Exports to other States of the Commonwealth.		Net Interstate Exports.*	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Bushels.	£	Bushels.	£	Bushels.	£
New South Wales ...	488,406	117,194	24,962	8,086	—463,444	—109,108
Victoria	36,704	8,270	64,850	21,890	28,146	13,620
Queensland	23,787	8,766	475,491	108,584	451,704	99,818
South Australia ...	5,889	1,551	929	286	— 4,960	— 1,265
Western Australia ...	8,432	2,213	...	...	— 8,432	— 2,213
Tasmania	3,014	852	...	...	— 3,014	— 852

* — Signifies net Imports.

10. **Price of Maize.**—The average wholesale price of maize in the Sydney market is given in the following table for each of the years 1901 to 1906:—

AVERAGE PRICE OF MAIZE PER BUSHEL.

Year	1901.	1902.	1903.	1904.	1905.	1906.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Average price per bushel ...	2 9	4 10	4 1	2 4	3 3	3 0

§ 7. Barley.

1. **Area under Barley.**—The barley crop of the Commonwealth is one which has fluctuated very considerably as regards area, but the net result of these fluctuations has left it in practically the same position as that which it occupied twenty-six years ago. Thus in the season 1880-1, the area of barley harvested totalled 105,919 acres, while in 1906-7 no more than 106,436 acres were reaped. The principal barley-growing State of the Commonwealth is Victoria, which, for the season 1906-7, accounted for nearly 50 per cent. of the Commonwealth area devoted to this crop. The figures here given relate to the areas harvested for grain ; only small areas are cropped for hay, while more considerable quantities are cut for green forage. These, however, are not included in this section. The area under barley for grain in the several States from 1875 onwards is shewn in the following table :—

COMMONWEALTH AREA UNDER BARLEY, 1875-6 TO 1906-7.

Season.	N.S.W.	Victoria.	Q'nsland.	Sth. Aust.	W. Aust.	Tasmania.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1875-6	4,817	81,568	613	13.969	5,014	5,939	61,920
1880-1	8,056	68,630	1,499	13,074	6,363	8,297	105,919
1885-6	5,298	74,112	406	16,493	6,178	6,833	109,320
1890-1	4,937	87,751	584	14,472	5,322	4,376	117,442
1895-6	7,590	78,438	721	14,184	1,932	6,178	109,043
1900-1	9,435	58,853	7,533	15,352	2,536	4,502	98,211
1901-2	6,023	32,423	11,775	15,517	2,669	6,104	74,511
1902-3	4,557	37,716	430	21,493	3,783	8,281	76,260
1903-4	10,057	47,760	22,881	28,697	3,609	8,084	121,088
1904-5	14,930	46,089	17,387	23,904	3,251	7,646	113,207
1905-6	9,519	40,938	5,201	26,250	3,665	5,372	90,945
1906-7	7,979	52,816	8,601	28,122	3,590	5,328	106,436

The only State in which a marked increase in the area devoted to this crop is in evidence is that of South Australia.

2. **Malting and other Barley.**—In recent years the statistics of all the States, except South Australia, have distinguished between "malting" and "other" barley. Particulars for the Commonwealth are as follows, the figures for South Australia being estimated:—

AREA UNDER MALTING AND OTHER BARLEY, COMMONWEALTH, 1906-7.

State	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Malting Barley	5,528	30,052	6,696	16,001*	1,138	4,046	63,461
Other Barley...	2,451	22,764	1,905	12,121*	2,452	1,282	42,975
Total ...	7,979	52,816	8,601	28,122*	3,590	5,328	106,436

* Estimated.

It will be seen that taking the Commonwealth as a whole, about 60 per cent. of the area devoted to this grain is cropped with malting barley. The proportion varies considerably in the several States.

3. **Total Yield.**—The total production of barley in the Commonwealth for the season 1906-7, viz., 2,248,432 bushels, was greater than for any previous year except 1903, when a record of 2,656,313 bushels was established, and 1889 when a total of 2,416,163 was reached. Particulars concerning the yields of the several States from 1875 onwards are as follows :—

COMMONWEALTH BARLEY CROP, 1875-6 TO 1906-7.

Season.	N.S.W.	Victoria.	Q'sland.	Sth. Aust.	West Aust.	Tasmania.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1875-6	98,576	700,665	12,260	197,315	70,196	165,357	1,244,369
1880-1	163,395	1,068,830	31,433	151,886	89,082	169,156	1,673,782
1885-6	85,606	1,302,854	9,826	218,334	89,581	176,466	1,882,667
1890-1	81,383	1,571,599	12,673	175,583	85,451	99,842	2,026,531
1895-6	96,119	715,592	7,756	140,391	18,691	138,833	1,117,382
1900-1	114,228	1,215,478	127,144	211,102	29,189	116,911	1,814,052
1901-2	103,361	693,851	277,037	243,362	34,723	167,485	1,519,819
1902-3	18,233	561,144	3,595	317,155	46,255	201,133	1,147,515
1903-4	174,147	1,218,003	510,557	487,920	53,227	212,459	2,656,313
1904-5	266,781	874,099	331,772	346,718	37,332	163,194	2,019,896
1905-6	111,266	1,062,189	61,816	505,916	49,497	92,664	1,883,298
1906-7	152,739	1,255,442	158,283	491.246	48,827	141.895	2,248,432

4. **Value of Barley Crop.**—The estimated value of the total barley crop of the Commonwealth is £343,535, the extent to which the several States have contributed to this total being shewn in the following table:—

VALUE OF BARLEY CROP.

State	N.S.W.	Victoria.	Q'sland.	Sth. Aus.	Wst. Aus.	Tas.	C'wealth.
Total Value ...	£25,460	£205,832	£17,807	£61,406	£8,198	£24,832	£343,535
Value per acre	£3/4/8	£3/17/11	£2/1/5	£2/3/8	£2/5/8	£4/13/3	£3/4/7

5. **Imports and Exports Oversea.**—The Commonwealth oversea trade in barley is not extensive, and in most years the imports exceed the exports. In 1902 and 1903, somewhat extensive importations of barley from the United States and New Zealand took place, owing to the shortage in local supply resulting from the severe drought of that period. In 1904, the record crop of the season 1903-4 furnished the material for a heavy exportation to Japan, the total exported thither during that year being 551,825 bushels. Particulars of the Commonwealth oversea imports and exports of barley for the six years 1901 to 1906 are contained in the following table:—

OVERSEA IMPORTS AND EXPORTS OF BARLEY, 1901-1906.

Year.	Imports.		Exports.		Net Exports.*	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Bushels.	£	Bushels.	£	Bushels.	£
1901 ...	55,508	7,208	17,474	1,942	— 38,034	— 5,266
1902 ...	686,478	123,194	8,267	1,465	—678,211	—121,729
1903 ...	731,494	136,997	14,286	5,561	—717,208	—131,430
1904 ...	246,908	39,012	568,640	65,950	321,732	26,938
1905 ...	124,850	19,672	244,456	28,618	119,606	8,946
1906 ...	210,586	34,468	3,150	562	—207,436	— 33,906

* - Signifies net imports.

In addition to the above, which relates to the unprepared grain, there is a small importation into the Commonwealth of pearl and Scotch barley mainly from the United Kingdom and Germany. The total imported during 1906 amounted to only 17,869 lbs. in weight, with a value of £159.

6. **Oversea Imports and Exports of Malt.**—The importations of malt into the Commonwealth are fairly extensive, the bulk of the supply being obtained from the United Kingdom and Germany, principally from the former. Details of imports and exports for the past six years are given hereunder :—

OVERSEA IMPORTS AND EXPORTS OF MALT, 1901-1906.

Year	Imports.		Exports.		Net Imports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Bushels.	£	Bushels.	£	Bushels.	£
1901	516,135	140,615	...	...	516,135	140,615
1902	293,637	91,410	...	...	293,637	91,410
1903	175,212	54,532	198	76	175,014	54,456
1904	189,500	57,571	787	313	188,713	57,258
1905	170,712	53,247	41	14	170,671	53,233
1906	172,433	55,714	539	85	171,894	55,629

7. **Interstate Trade in Barley and Malt.** — Victoria, as well as being the largest grower of barley in the Commonwealth, is also the largest importer from the other States. The largest exporter to the other States during 1906 was South Australia. In the cases of both pearl barley and malt New South Wales was the largest importer from the other States and Victoria the largest exporter.

INTERSTATE TRADE IN BARLEY AND MALT, 1906.

BARLEY (UNPREPARED).

State.	Imports from Other States of the Commonwealth.		Exports to Other States of the Commonwealth.		Net Interstate Exports.*	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Bushels.	£	Bushels.	£	Bushels.	£
New South Wales	24,899	7,681	10,988	4,161	— 13,911	— 3,520
Victoria ...	64,602	23,877	21,055	6,643	— 43,547	— 17,234
Queensland ...	10,651	3,532	1,024	342	— 9,627	— 3,190
South Australia ...	81	39	76,087	26,782	76,006	26,743
Western Australia	11,232	3,595	...	...	— 11,232	— 3,595
Tasmania ...	1,058	351	3,369	1,147	2,311	796

BARLEY (PEARL AND SCOTCH).

	Lbs.	£	Lbs.	£	Lbs.	£
New South Wales	602,396	2,632	1,581	14	— 600,815	— 2,618
Victoria ...	...	...	831,619	4,225	831,619	4,225
Queensland ...	87,739	518	139,156	605	51,417	87
South Australia ...	152,504	884	81,960	371	— 70,544	— 513
Western Australia	186,006	1,015	...	...	— 186,006	— 1,015
Tasmania ...	25,671	166	...	...	— 25,671	— 166

MALT.

	Bushels.	£	Bushels.	£	Bushels.	£
New South Wales	112,954	76,296	2,304	1,572	— 110,650	— 74,724
Victoria ...	1,635	977	149,813	103,642	148,178	102,665
Queensland ...	17,560	12,616	1,753	1,160	— 15,807	— 11,456
South Australia ...	829	616	15,244	10,976	14,415	10,360
Western Australia	35,908	26,577	...	...	— 35,908	— 26,577
Tasmania ...	228	268	...	...	— 228	— 268

* — Signifies net imports.

8. **Comparison with Other Countries.**—In comparison with the barley production of other countries of the world that of Australia appears very small indeed. Particulars for some of the leading countries for the year 1905 are as follows, the Australian figure being added for the sake of comparison:—

PRODUCTION OF BARLEY IN VARIOUS COUNTRIES, 1905.

Country.	Production of Barley.	Country.	Production of Barley.
	Bushels.		Bushels.
Russian Empire ...	332,045,280	France	41,548,104
United States ...	132,380,672	Rumania ...	25,567,360
Germany	128,799,688	Ontario... ...	24,265,392
United Kingdom ...	65,003,560	Manitoba ...	14,064,176
Austria	64,359,408	Sweden	13,141,976
Spain	44,067,768	**Australia** ...	**1,884,298**

9. **Average Yield.**—The average yield per acre of barley varies considerably in the different States, being highest in Tasmania and Victoria, and lowest in Western Australia and Queensland. Details for each State for the six seasons 1901-2 to 1906-7 are given in the following table:—

AVERAGE YIELD PER ACRE OF BARLEY, 1901-2 TO 1906-7.

Season.	N.S.W.	Victoria.	Q'sland.	Sth. Aust.	West Aust.	Tas.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1901-2 ...	17.16	21.40	23.53	15.68	13.01	27.44	20.40
1902-3 ...	4.00	14.88	8.36	14.76	12.23	24.29	15.05
1903-4 ...	17.32	25.50	22.31	17.00	14.75	26.28	21.94
1904-5 ...	17.87	18.97	19.08	14.50	11.48	21.34	17.84
1905-6 ...	11.69	25.95	11.89	19.27	13.51	17.44	20.72
1906-7 ...	19.14	23.77	18.40	17.47	13.60	26.63	21.12

10. **Price of Barley.**—The average prices of barley in the Melbourne market during each of the years 1903 to 1906 are given in the following table:—

AVERAGE PRICE OF BARLEY PER BUSHEL, 1903 TO 1906.

Particulars.	1903.	1904.	1905.	1906.
	s. d.	s. d.	s. d.	s. d.
Malting Barley	3 11	3 6	4 0	4 5
Cape Barley...	3 1	1 9	2 7	2 4

§ 8. Other Grain and Pulse Crops.

In addition to the grain crops already specified, the only grain and pulse crops at all extensively grown in the Commonwealth are beans, peas and rye. The total area under the two former for the season 1906-7 was 30,824 acres, giving a total yield of 655,167 bushels, or an average of 21.26 bushels per acre. The States in which the greatest area is devoted to beans and peas are Victoria, Tasmania and South Australia. The total area under rye in the Commonwealth during the season 1906-7 was 9738 acres, yielding 137,471 bushels, and giving an average of 14.12 bushels per acre. More than two-thirds of the rye grown during the season was produced in New South Wales. In addition to these grain crops a small area of rice has for some years past been cultivated in Queensland. The results obtained, however, have not offered sufficient inducement to growers to continue this crop, and the total area devoted to it has declined from 863 acres in 1898-9 to 24 in 1906-7. Should rice-growing ever be seriously taken up in Australia, it is probable that large tracts of country in the northern parts of Western Australia and in the Northern Territory will be found well suited to its cultivation.

§ 9. Potatoes.

1. **Area.**—The principal potato-growing State of the Commonwealth, as regards area, is Victoria, New South Wales ranking second and Tasmania third. The area devoted to this crop in the Commonwealth, which has fluctuated somewhat, reached its highest point in the season 1906-7, with a total of 146,681 acres. The largest areas planted in any previous season were 139,397 acres in 1899-1900, and 127,592 acres in 1894-5. The area under potatoes in each State from 1890 onwards is given hereunder :—

COMMONWEALTH AREA UNDER POTATOES, 1890-1 TO 1906-7.

Season.	N.S.W.	Victoria.	Q'nsland.	Sth. Aust.	W. Aust.	Tasmania.	Com'wealth
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1890-1	19,406	53,818	6,270	6,626	511	20,133	106,764
1895-6	24,722	43,895	9,240	6,448	668	19,247	104,220
1900-1	29,408	38,477	11,060	6,628	1,794	23,068	110,435
1901-2	26,158	40,058	9,948	6,248	1,829	25,444	109,685
1902-3	19,444	49,706	2,899	7,763	2,084	34,625	116,521
1903-4	20,851	48,930	6,732	8,616	1,823	29,160	116,112
1904-5	23,855	46,912	9,771	8,315	1,906	25,948	116,707
1905-6	26,374	44,670	7,170	9,540	2,145	28,634	118,533
1906-7	36,815	55,372	8,031	9,894	2,264	34,305	146,681

2. **Total Yield.**—Although only third amongst the States in respect of area under potatoes, Tasmania has, in several recent years, occupied the leading position in point of production. For the season 1906-7, Tasmania's production represented 36 per cent. of the total for the Commonwealth, Victoria and New South Wales coming next in order. The total Commonwealth production for the season 1906-7, viz., 507,153 tons, was the highest ever attained, the yield which most nearly approached it being 449,383 tons in 1903-4. Details as to production in the several States during the period from 1890 onwards are as follows :—

COMMONWEALTH PRODUCTION OF POTATOES, 1890-1 TO 1906-7.

Season.	N.S.W.	Victoria.	Q'nsland.	Sth. Aust.	W. Aust.	Tasmania.	Com'wealth.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1890-1	52,791	204,155	13,112	23,963	1,900	73,158	369,079
1895-6	56,179	117,238	19,027	18,412	2,290	81,423	294,569
1900-1	63,253	123,126	20,014	14,566	4,836	93,862	319,657
1901-2	39,146	125,474	22,402	15,059	5,739	114,704	322,524
1902-3	30,732	168,759	3,257	28,312	6,488	163,518	401,066
1903-4	56,743	167,736	17.649	31,415	4,542	171,298	449,383
1904-5	48,754	92,872	19,231	19,521	5,614	110,547	296,539
1905-6	49,889	115,852	11,308	20,238	6,297	64,606	267,780
1906-7	114,856	166,839	15,830	22,277	5,028	182.323	507,153

3. **Average Yield.**—The suitability of the soil, climate, and general conditions of Tasmania for potato growing are evidenced by the high yields per acre which are almost invariably obtained in the island State. The lowest average yield is that obtained in Queensland. Particulars for each State for the six seasons 1901-2 to 1906-7 are given hereunder :—

AVERAGE YIELD OF POTATOES, COMMONWEALTH AND STATES.

1901-2 to 1906-7.

Season.	N.S.W.	Victoria.	Queensl'd.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1901-2	1.50	3.13	2.25	2.41	3.14	4.51	2.94
1902-3	1.58	3.40	1.12	3.65	3.11	4.72	3.44
1903-4	2.72	3.43	2.62	3.65	2.49	5.87	3.87
1904-5	2.04	1.98	1.97	2.35	2.95	4.26	2.54
1905-6	1.89	2.58	1.58	2.13	2.94	2.26	2.26
1906-7	3.12	3.01	1.97	2.25	2.22	5.31	3.46

4. **Value of Potato Crop.**—The estimated value of the potato crop of each State for the season 1906-7 is furnished in the following table together with the value per acre:

VALUE OF POTATO CROP. 1906-7.

State.	N.S.W.	Victoria.	Queensl'd.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
Total value	£548,470	£333,678	£142,470	£55,693	£57,822	£364,646	£1502,779
Value per acre	£14/18/0	£6/0/6	£17/14/10	£5/12/7	£25/10/10	£10/12/7	£10/4/11

5. **Oversea Imports and Exports.**—Under normal conditions there is usually a fairly large export trade in potatoes carried on by the Commonwealth, principally with New Zealand and New Caledonia. Thus, during 1906, out of a total export of 12,908 tons, 10,818 tons went to New Zealand and 1217 tons to New Caledonia. On the other hand when in 1902 and 1903 the drought of that period had brought about a shortage in the Australian supplies importations from New Zealand took place to the extent of 11,471 tons in the former and 2279 tons in the latter year. The quantities and values of the Commonwealth oversea imports and exports of potatoes for the six years 1901 to 1906 are contained in the following table:—

COMMONWEALTH OVERSEA IMPORTS AND EXPORTS OF POTATOES.

1901 TO 1906.

Year.	Imports.		Exports.		Net Exports.*	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Tons.	£	Tons.	£	Tons.	£
1901 ...	17,655	86,067	6,028	45,485	— 11,627	— 40,582
1902 ...	11,608	53,919	3,383	20,192	— 8,225	— 33,727
1903 ...	2,367	7,752	3,407	12,336	1,040	4,584
1904 ...	2,602	8,186	5,464	14,462	2,862	6,276
1905 ...	428	3,181	4,058	29,730	3,630	26,549
1906 ...	295	2,205	12,908	86,248	12,613	84,043

* — Signifies net imports.

6. **Interstate Trade in Potatoes.**—A large trade in potatoes is carried on between the States of the Commonwealth, the principal exporters being Tasmania and Victoria, and the chief importers New South Wales, Western Australia and Queensland. Particulars for each State for the year 1906 are given hereunder:—

INTERSTATE TRADE IN POTATOES, 1906.

State.	Imports to Other States of the Commonwealth.		Exports from Other States of the Commonwealth.		Net Interstate Exports.*	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Tons.	£	Tons.	£	Tons.	£
New South Wales	44,671	298,926	4,562	34,650	— 40,109	— 264,276
Victoria ...	1,146	7,943	24,962	174,284	23,816	166,341
Queensland ...	13,346	96,542	473	3,305	— 12,873	— 93,237
South Australia ...	4,676	33,789	2,695	19,281	— 1,981	— 14,508
Western Australia	13,287	98,109	...	...	— 13,287	— 98,109
Tasmania ...	294	1,844	44,728	305,633	44,434	303,789

* — Signifies net imports.

7. **Comparison with Other Countries.**—The following table will furnish means for comparing the potato crop of Australia for 1906-7 with those of some of the leading potato-producing countries of the world. The figures given for these countries are the latest available, and relate in the majority of cases to the years 1904 and 1905 :—

POTATO CROPS OF VARIOUS COUNTRIES.

Country.	Yield.	Country.	Yield.
	Tons.		Tons.
Germany	47,546,728	United States ...	6,518,532
Russian Empire ...	28,083,985	Belgium	2,453,730
Austria-Hungary ...	13,871,336	Netherlands ...	2,287,588
France	12,078,003	Sweden	1,812,676
United Kingdom ...	7,185,745	**Australia** ...	**507,153**

§ 10. Other Root and Tuber Crops.

1. **Nature and Extent.**—Root crops, other than potatoes, are not extensively grown in Australia, the total area devoted to them for the season 1906-7 being only 17,524 acres. The principal ones are onions, mangolds, beet, turnips, and "sweet potatoes" *(Batatas edulis)*. Of these onions are most largely grown in Victoria, mangolds in Tasmania and Victoria, beet in Victoria, turnips in Tasmania, and sweet potatoes almost solely in Queensland. The total area under onions in the Commonwealth during the season 1906-7 was 5378 acres, giving a total yield of 31,756 tons, and averaging 5.90 tons per acre. The area devoted in 1906-7 to root crops other than potatoes and onions, viz., 12,146 acres, yielded 122,659 tons, and gave an average of 10.10 tons per acre. The areas and yields here given are exclusive of the production of "market gardens," a reference to which will be made later.

2. **Oversea Imports and Exports.**—The only root crop, other than potatoes, in which any considerable oversea trade is carried on by the Commonwealth is that of onions. During the year 1906 oversea imports of onions amounted to 658 tons, the principal countries from which they were imported being Japan, the United States of America, and the Straits Settlements. For the same year the exports of onions totalled 2683 tons, the principal countries to which they were exported being New Zealand, the United States of America, the Philippine Islands, and New Caledonia.

3. **Interstate Trade.**—A fairly extensive trade in onions is carried on between the several States of the Commonwealth. Victoria, the largest producer of onions, is naturally the largest exporter, while New South Wales, Queensland, and Western Australia are the principal importers. During the year 1906 the interstate onion trade was as follows:—

INTERSTATE TRADE IN ONIONS, 1906.

State.	Imports from Other States of the Commonwealth.		Exports to Other States of the Commonwealth.		Net Interstate Exports.*	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Tons.	£	Tons.	£	Tons.	£
New South Wales ...	7,292	42,223	578	3,437	— 6,714	— 38,786
Victoria	68	300	13,826	78,630	13,758	78,330
Queensland ...	3,949	22,090	14	94	— 3,935	— 21,996
South Australia ...	250	1,654	314	1,768	64	114
Western Australia ...	2,659	14,765	...	...	— 2,659	— 14,765
Tasmania	522	2,945	8	48	— 514	— 2,897

* — Signifies net imports.

§ 11. Hay.

1. **Nature and Extent.**—As already stated, the most important crop of the Commonwealth is that of wheat grown for grain. Next to this in importance is the hay crop, which for the season 1906-7 represented rather more than 17 per cent. of the area under crops in the Commonwealth. In most European countries the hay crop consists almost entirely of meadow and other grasses, whilst in Australia a very large proportion of the area under hay comprises cereal crops, mainly wheat and oats. A considerable quantity of lucerne hay is also made, particularly in New South Wales and Queensland. The area under hay of all kinds in the several States from 1860 onwards is given hereunder:—

AREA UNDER HAY, 1860-1 TO 1906-7.

Season.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	W. Aust.	Tas.	Com'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1860-1	46,584	90,921	276	55,818	6,626	31,837	232,062
1865-6	61,909	97,902	1,449	101,996	8,824	30,244	302,324
1870-1	65,404	163,181	3,671	140,316	17,173	33,612	423,357
1875-6	77,125	155,274	8,531	161,429	17,319	34,758	454,436
1880-1	131,153	249,656	12,022	272,567	19,563	31,615	716,576
1885-6	219,886	421,036	28,881	312,672	19,677	41,693	1,043,845
1890-1	175,242	413,052	31,106	345,150	23,183	45,381	1,033,114
1895-6	319,296	464,482	28,609	362,972	63,804	54,748	1,293,911
1900-1	466,236	502,105	42,497	341,330	104,254	61,541	1,517,963
1901-2	442,163	659,239	63,055	369,796	92,654	61,495	1,688,402
1902-3	491,918	580,884	20,068	325,789	105,791	66,038	1,590,488
1903-4	496,017	733,353	78,393	370,152	109,002	66,947	1,853,864
1904-5	435,704	452,459	48,740	269,626	105,247	55,545	1,367,321
1905-6	438,036	591,771	37,425	317,924	124,906	64,350	1,574,412
1906-7	458,072	621,139	64,498	295,895	149,830	64,965	1,654,399

It will be seen from this table that in all the States marked fluctuations occur in the area devoted to the hay crop from year to year. These fluctuations are due to various causes, the principal being the variations in the relative prices of grain and hay, and the favourableness or otherwise of the season for a grain crop. Thus crops originally sown for grain are frequently cut for hay owing to the improved price of that commodity, or owing to the fact that the outlook for the due development of the grain is not a satisfactory one. On the other hand, improved grain prices or the prospect of a heavy yield will frequently cause crops originally intended for hay to be left for grain. In the season 1903-4, when 1,853,864 acres were devoted to this crop, the maximum area under hay for the Commonwealth was reached, the reason being the shortage and consequent high prices resulting from the poor yield of the previous season, 1902-3.

2. **Kinds of Hay.**—Particulars concerning the kind of crop cut for hay are furnished in the returns prepared by four of the States, totals only being shewn in the cases of South Australia and Tasmania. Details of the past six seasons are given in the following table:—

KINDS OF HAY GROWN, 1901-2 to 1906-7.

Kind of Hay Crop.	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
NEW SOUTH WALES—						
Wheaten	312,858	320,588	286,702	284,367	313,582	316,845
Oaten	96,833	131,891	159,828	107,805	88,495	94,420
Barley	981	1,782	1,242	1,285	2,397	843
Lucerne	31,491	37,657	48,245	42,247	33,562	45,964
Total	442,163	491,918	496,017	435,704	438,036	458,072
VICTORIA—						
Wheaten	284,582	161,657	200,673	132,265	203,726	231,408
Oaten	368,258	412,485	523,155	309,143	377,885	377,887
Other	6,399	6,742	9,525	11,051	10,160	11,844
Total	659,239	580,884	733,353	452,459	591,771	621,139
QUEENSLAND—						
Wheaten	9,719	867	6,189	3,137	2,856	8,664
Oaten	17,167	2,619	19,523	9,076	4,446	9,260
Lucerne	34,177	15,213	49,501	35,009	28,564	44,178
Other	1,992	1,369	3,180	1,518	1,559	2,396
Total	63,055	20,068	78,393	48,740	37,425	64,498
WESTERN AUSTRALIA—						
Wheaten	92,654	79,708	78,210	79,913	99,629	116,164
Oaten		24,543	29,100	23,914	23,910	32,521
Other		1,540	1,692	1,420	1,367	1,145
Total	92,654	105,791	109,002	105,247	124,906	149,830

It will be seen that for the four States for which particulars are available, wheat is the principal hay crop in New South Wales and Western Australia, oats in Victoria, and lucerne in Queensland.

3. **Total Yield.**—The Commonwealth hay crop for the season 1906-7 amounted to 2,256,140 tons, a total which has only once been exceeded, viz., by the record yield of the season 1903-4, when the hay harvest resulted in a production of 2,903,160 tons. For many years past the State of Victoria has been the largest hay producer in the Commonwealth, and in the season 1906-7 accounted for nearly 40 per cent. of the total production. The total yields of the several States from 1860 onwards is given hereunder:—

COMMONWEALTH HAY CROP, 1860-1 TO 1906-7.

Season.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Commonwealth.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1860-1	50,927	144,211	414	71,241	8,099	62,318	337,210
1865-6	54,230	96,101	2,173	88,731	7,901	34,751	283,887
1870-1	69,602	183,708	5,506	197,149	20,833	40,763	517,561
1875-6	88,968	206,613	12,796	194,794	17,319	49,217	569,707
1880-1	174,194	300,581	23,441	261,371	19,563	35,883	815,033
1885-6	191,871	442,118	30,670	307,855	19,677	51,872	1,043,563
1890-1	213,034	567,779	50,116	310,125	25,014	52,021	1,218,089
1895-6	229,671	390,861	50,881	225,462	53,758	62,345	1,012,978
1900-1	526,260	677,757	78,758	353,662	103,813	94,198	1,834,448
1901-2	472,621	884,369	122,039	346,467	89,729	109,383	2,024,608
1902-3	243,379	601,272	23,181	308,825	94,007	89,210	1,359,874
1903-4	816,810	1,233,063	136,117	479,723	121,934	115,513	2,903,160
1904-5	366,293	514,316	80,662	294,252	113,794	73,457	1,442,774
1905-6	459,182	864,177	56,829	435,546	139,380	90,077	2,045,191
1906-7	621,846	881,276	94,343	395,766	158,112	104,797	2,256,140

4. **Value of Hay Crop.**—The following table furnishes particulars concerning the total value and the value per acre of the hay crop of the several States of the Commonwealth for the season 1906-7:—

VALUE OF HAY CROP, 1906-7.

Particulars.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Commonwealth.
Total value ...	£2,195,950	£1,681,768	£287,792	£791,532	£632,448	£327,490	£5,916,980
Value per acre	£4 15/10	£2 14/2	£4 9/3	£2 13/6	£4 4/5	£5 0/10	£3 11/6

5. **Average Yield per Acre.**—The States of the Commonwealth in which the highest average yields per acre have been obtained are those of Queensland and Tasmania, these being also the States in which the smallest areas are devoted to this crop. For the past six seasons the lowest yield for the Commonwealth as a whole was that of 17 cwt. per acre in 1902-3, and the highest that of 31 cwt. in 1903-4. Particulars for the several States for the seasons 1901-2 to 1906-7 are given hereunder:—

AVERAGE YIELD OF HAY PER ACRE, 1901-2 TO 1906-7.

Season.	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tas.	C'wealth.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1901-2	1.07	1.34	1.94	0.94	0.97	1.78	1.20
1902-3	0.49	1.04	1.16	0.95	0.89	1.35	0.86
1903-4	1.65	1.68	1.74	1.30	1.12	1.73	1.57
1904-5	0.84	1.14	1.65	1.09	1.08	1.32	1.06
1905-6	1.05	1.46	1.52	1.37	1.12	1.40	1.30
1906-7	1.36	1.42	1.46	1.34	1.06	1.61	1.36

6. **Oversea Imports and Exports.**—Under normal conditions hay, whether whole or in the form of chaff, is somewhat bulky for oversea trade, and consequently does not in such circumstances figure largely amongst the imports and exports of the Commonwealth. In 1901 and 1902, however, the exceptional demand which was created by the South African war brought about a fairly large export of hay and chaff to Natal and Cape Colony.

These colonies also took and are still taking a considerable quantity of Australian compressed fodder. During the year 1904, when the war between Japan and Russia was being carried on, the exports of compressed fodder to Hong Kong were valued at £42,759 and those to Japan at £23,608. The total value of the hay and chaff exported during 1901 was £406,455, as compared with £9924 only in 1906, while the exports of fodder, which amounted in value to £142,472 in 1904, had shrunk to £29,872 in 1906.

7. **Interstate Trade in Hay and Chaff.**—A considerable trade in hay and chaff is carried on between the several States of the Commonwealth, the exporting States during the year 1906 being South Australia and Victoria, and the importing States New South Wales, Queensland, Tasmania and Western Australia. Western Australia, however, has during 1907 entered the ranks of the exporting States, some large shipments of chaff having been consigned thence to New South Wales. Particulars of interstate imports and exports for 1906 are given in the following table:

INTERSTATE TRADE IN HAY AND CHAFF, 1906.

State.	Imports from Other States of the Commonwealth.		Exports to Other States of the Commonwealth.		Net Interstate Exports.*	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Tons.	£	Tons.	£	Tons.	£
New South Wales	71,080	226,608	2.232	7,609	—68,848	—218,999
Victoria ...	276	756	45,787	133,240	45,511	132,484
Queensland ...	14,200	35,627	910	3,026	—13,290	— 32,601
South Australia ...	76	169	50,017	160,376	49,941	160,207
Western Australia	5,939	20,243	...	...	— 5,939	— 20,243
Tasmania ...	7,419	20,983	44	135	— 7,375	— 20,848

* Signifies net imports.

8. **Hay Production in other Countries.**—As already noted, the hay crops of most European countries consist of grasses of various kinds, amongst which clover, lucerne, sainfoin and rye grass occupy a prominent place. The statistics of hay production in these countries are not prepared on a uniform basis, and consequently any attempt to furnish an extensive comparison of the production of hay in the various countries would probably be misleading. It may be noted, however, that in the United Kingdom the production of hay from clover, sainfoin, etc., was for the year 1905 represented by 4,542,552 tons from 2,818,012 acres, while from permanent grasses a yield of 9,011,398 tons of hay was obtained from 6,353,492 acres, giving a total of 13,553,950 tons from 9,171,504 acres, or about 28 cwt. per acre.

§ 12. Green Forage.

1. **Nature and Extent.**—In all the States of the Commonwealth a considerable area is devoted to the production of green forage, mainly in connection with the dairying industry. The total area so cropped during the season 1906-7 was no less than 236,484 acres. Of this total the New South Wales area represented rather more than 50 per cent., while that in Queensland fell little short of 20 per cent. of the total. The principal crops cut for green forage are maize, sorghum, oats, barley, rye, rape, and lucerne, while small quantities of sugar-cane also are so used. Particulars concerning the area under green forage in the several States from 1890 onwards are furnished in the following table:—

AREA UNDER GREEN FORAGE, 1890-1 TO 1906-7.

Season.	N.S.W.	Vic.	Qld.	S. Aust.	W. Aust.	Tas.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1890-1 ...	37,473	10,091	9,546	7,349	161	1,497	66,117
1895-6 ...	66,833	25,939	19,552	7,309	430	1,883	121,946
1900-1 ...	78,144	18,975	41,445	13,136	1,024	3,749	156,473
1901-2 ...	113,060	32,795	39,793	18,695	1,563	4,082	204,988
1902-3 ...	109,287	31,145	51,279	14,937	636	3,355	210,639
1903-4 ...	77,130	33,165	26,576	19,241	672	3,100	159,884
1904-5 ...	87,718	29,902	35,861	20,362	1,643	4,117	179,603
1905-6 ...	95,058	34,041	66,183	23,842	1,873	4,882	225,879
1906-7 ...	122,893	36,502	50,513	17,985	3,265	5,326	236,484

2. **Value of Green Forage Crops.**—The value of these crops is variously estimated in the several States. Taking the Commonwealth as a whole, it may be set down approximately at £2 15s. per acre for the season 1906-7, giving a total value of about £650,000.

§ 13. Sugar-Cane.

1. **Area.**—Sugar-cane is grown in only two of the States of the Commonwealth, viz., Queensland and New South Wales, and much more extensively in the former than the latter. Thus of the total area of 153,885 acres under sugar cane in the Commonwealth for the season 1906-7 there were 133,284 acres or about 87 per cent. in Queensland. Sugar cane growing appears to have been started in the Commonwealth in or about 1862, as the earliest statistical record of sugar-cane as a crop is that which credits Queensland with an area of twenty acres for the season 1862-3. In the following season the New South Wales records shew that an area of two acres was devoted to the crop in the mother State. The area under cane in New South Wales reached its maximum in 1895-6 with a total of 32,927 acres. It then fell continuously to 1902-3, when it was lower than for any previous season since 1889-90. Since 1902-3 it has remained practically stationary. In Queensland, on the other hand, although fluctuations in area are in evidence throughout, the general trend has been one of satisfactory and somewhat rapid increase, the area under cane for 1905 being the highest on record, and that for 1906 only a little short of it. The area under sugar-cane in the Commonwealth from 1865 onwards is given in the following table:—

AREA UNDER SUGAR-CANE, 1865-6 TO 1906-7.

Season.	N.S.W.	Queensland.	C'wealth.	Season.	N.S.W.	Queensland.	C'wealth.
	Acres.	Acres.	Acres.		Acres.	Acres.	Acres.
1865-6	141	450	591	1900-1	22,114	108,535	130,649
1870-1	4,082	6,342	10.424	1901-2	20,809	112,031	132,840
1875-6	6,454	13,459	19,913	1902-3	20,160	85,338	105,498
1880-1	10,971	20,224	31,195	1903-4	20,182	111,516	131,698
1885-6	16,419	59,186	75,605	1904-5	21,525	120,317	141,842
1890-1	20,446	50,922	71.368	1905-6	21,805	134,107	155,912
1895-6	32,927	77,247	110.174	1906-7	20,601	133,284	153,885

2. **Productive and Unproductive Cane.**—The areas given in the preceding table represent the total area on which sugar-cane was grown during the seasons specified for purposes other than green forage. The whole area, however, was not in any case cut for crushing during that season, there being always a considerable amount of "stand over" cane, as well as a small amount required for plants. In the season 1906-7 the New South Wales total comprised 10,378 acres of productive and 10,223 acres of unproductive cane, while in the case of Queensland the productive cane amounted to 98,194 acres and the unproductive to 35,090 acres, the latter including 1057 acres for plants.

3. **Yield of Cane.**—Queensland statistics of the production of sugar-cane are not available for dates prior to the season 1897-8. In that season the total for the Commonwealth was 1,073,883 tons as against 1,950,340 tons for 1906-7. The average yield per acre of productive cane is much higher in New South Wales than in Queensland, and during the past six years has in the case of the former State remained practically constant at about twenty-one tons per acre. Particulars relative to the total and average yields of the Commonwealth sugar crops for the six seasons 1901-2 to 1906-7 are as follows:—

YIELD OF SUGAR-CANE, 1901-2 TO 1906-7.

Season.	Total Yield of Cane.			Average Yield per Acre of Productive Cane.		
	N.S.W.	Queensland.	C'wealth.	N.S.W.	Queensland.	C'wealth.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1901-2 ...	187,711	1,180,091	1,367,802	21.36	15.10	15.73
1902-3 ...	183,105	641,927	825,032	20.90	10.86	12.16
1903-4 ...	227,511	823,875	1,051,386	21,94	13.65	14.86
1904-5 ...	199,640	1,326,989	1,526,629	20.43	16,04	16.50
1905-6 ...	201,998	1,415,745	1,617,743	19.59	14.73	15.20
1906-7 ...	221,560	1,728,780	1,950,340	21.35	17.61	17.96

4. **Quality of Cane.**—The quantity of cane required to produce a ton of sugar varies considerably not only with the district in which the cane is grown but also with the season. In Queensland, for instance, during the past five seasons the sugar content of the cane crushed has continuously diminished, so that whilst in 1902-3 the quantity of cane used in producing a ton of sugar was 8.38 tons, in the season 1906-7 the quantity required was 9.38 tons, the production in the former case being approximately 12 per cent. and in the latter 11 per cent. of the weight of cane crushed. It should be noted however, that in 1901-2 no less than 9.76 tons of cane were needed to produce a ton of sugar. It may be remarked in this connection that the systematic study of the beet in Germany shewed that by suitable culture its sugar content might be greatly increased, and this is by no means impossible in the case of sugar-cane.

5. **Sugar Bounties.**—The provision of bounties or similar aids to the sugar-growers of the Commonwealth early occupied the attention of the Commonwealth Parliament, the object in view being that of assisting the industry whilst at the same time diminishing the employment of coloured labour in connection therewith. The earliest legislative provision made with this object in view was that contained in the Excise Tariff 1902, under which an excise duty of three shillings per cwt. of manufactured sugar was charged, and a rebate of four shillings per ton allowed on all sugar-cane delivered for manufacture in the production of which white labour only had been employed after 28th February, 1902. This rebate was calculated on the basis of cane giving 10 per cent. of sugar, and was increased or reduced proportionately according to any variation from this standard, that is to say, the rebate amounted to two shillings per cwt. of the sugar content of the cane treated. In actual practice it was found that this system of rebates was producing effects that had not been anticipated at the time the legislation was passed, and that the greater part of the cost of substituting white for black labour in the sugar-growing industry was thereby being imposed upon the States engaged in the industry, viz., Queensland and New South Wales, instead of being a charge upon the whole Commonwealth. To remedy this state of affairs the Sugar Rebate Abolition Act of 1903 was passed on 30th July, 1903, and the Sugar Bounty Act 1903 received assent on the same day. The rate of bounty provided by this latter Act was, as in the case of the rebate mentioned above, four shillings per ton of cane grown by white labour giving 10 per cent. of sugar, the bounty to be increased or reduced proportionately according to any variation from this standard. This Act remained in force until 31st December, 1906, when it was superseded by the provisions of the Sugar Bounty Act 1905, which extended the principle of bounties to the end of the year 1912, but stipulated that during the years 1911 and 1912 the rates payable on

cane delivered should be respectively two-thirds and one-third of the rates prevailing during the earlier years of the period. The rate of bonus allowed under this Act is six shillings per ton of cane of 10 per cent. quality grown by white labour, while under the Excise Tariff 1905, assented to on 21st December, 1905, the excise duty on sugar was. from 1st January, 1907, increased to four shillings per cwt. of manufactured sugar in place of three shillings formerly imposed.

6. **Cost of Bounties.**—The amounts paid by the Commonwealth Government in sugar bounties and the expenses in connection therewith during the five years 1902-3 to 1906-7, as well as the manner in which this expenditure was allocated to the several States, is shewn in the following table:—

EXPENDITURE ON SUGAR BOUNTIES AND EXPENSES. 1902-3 TO 1906-7.

Year.	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tas.	C'wealth.
	£	£	£	£	£	£	£
1902-3 ...	21,999	18,923	8,003	5,743	3,378	2,781	60,827
1903-4 ...	35,273	29,873	12,740	9,115	5,608	4,436	97,045
1904-5 ...	46,880	38,935	16,781	11,990	7,794	5,798	128,178
1905-6 ...	56,950	46,520	20,159	14,439	9,727	6,914	154,709
1906-7 ...	124,492	100,456	43,635	31,299	21,344	14,690	335,916

7. **Collection of Sugar Excise.**—The table hereunder contains particulars concerning the net amount of excise duty on sugar collected in respect of the several States for the five years 1902-3 to 1906-7. In this table refunds and drawbacks have been deducted and the requisite adjustment has been made between the States.

SUGAR EXCISE, 1902-3 TO 1906-7.

Year.	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tas.	C'wealth.
	£	£	£	£	£	£	£
1902-3 ...	166,952	10,715	61,523	1,332	7,294	13,701	261,517
1903-4 ...	166,646	Dr. 2,307	73,634	1,413	18,464	14,267	272,117
1904-5 ...	183,335	163,247	70,576	34,626	30,980	20,863	503,627
1905-6 ...	183,457	149,120	98,015	45,921	35,339	24,227	536,079
1906-7 ...	211,625	138,982	83,889	50,564	37,109	24,484	546,653

8. **Imports and Exports of Sugar.**—Notwithstanding the increase in the production of sugar in evidence in the Commonwealth during recent years, Australia's oversea import trade in cane sugar is still very extensive, the principal countries engaged in supplying this commodity being Java, Mauritius, and Fiji. For the year 1906 the total importation was valued at £439,916, and of this more than 80 per cent. came from Java. Particulars concerning the imports and exports of cane sugar for the six years 1901 to 1906 are as follows:—

IMPORTS AND EXPORTS OF CANE SUGAR, 1901 TO 1906.

Year.	Oversea Imports.		Oversea Exports.		Net Imports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	cwt.	£	cwt.	£	cwt.	£
1901 ...	1,970,883	1,239,550	94,764	68,876	1,876,119	1,170,674
1902 ...	1,862,063	1,120,554	66,736	48,751	1,795,327	1,071,803
1903 ...	1,830,595	1,054,338	47,295	33,242	1,783,300	1,021,096
1904 ...	760,702	415,120	58,882	42,699	701,820	372,421
1905 ...	498,670	276,157	223,161	155,514	275,509	120,643
1906 ...	839,519	439,916	185,072	140,466	654,447	299,450

The principal over-sea countries to which cane sugar from Australia has been exported are New Zealand, South Africa, and New Caledonia.

9. **Interstate Trade in Sugar.**—The Interstate trade in sugar is an extensive one, the exports from Queensland to the other States of the Commonwealth representing a value of £1,615,338 for the year 1906. The manner in which this trade is distributed amongst the several States is furnished in the table given hereunder:—

INTERSTATE SUGAR TRADE, 1906.

State.	Imports from Other States of the Commonwealth.		Exports to Other States of the Commonwealth.		Net Interstate Imports.*	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	cwt.	£	cwt.	£	cwt.	£
New South Wales	1,438,863	871,653	258,341	227,863	1,180,522	643,790
Victoria ...	981,312	528,836	115,949	93,171	865,363	435,665
Queensland ...	1,768	1,565	2,832,118	1,615,338	— 2,830,350	— 1,613,773
South Australia ...	466,583	259,936	75,412	61,693	391,171	198,243
Western Australia	216,438	184,612	287	267	216,151	184,345
Tasmania ...	177,251	151,822	108	92	177,143	151,730

* — Signifies net exports.

§ 14. Vineyards.

1. **Nature and Extent.**—The introduction of the grape vine into Australia is said to have taken place in 1828, some forty years after the first settlement. The locality claiming to be the cradle of the vine-growing industry of Australia is the Hunter River district of New South Wales, where, in the year mentioned, cuttings from celebrated vineyards of France, Spain, and Germany were planted. From New South Wales the vine spread to Victoria and South Australia, and these States have now far outstripped the mother State in the area which they have devoted to its cultivation. In Queensland and Western Australia also, vine-growing has been carried on for many years, but in neither State has the industry progressed with the rapidity attained in Victoria and South Australia. In Tasmania the climate is not favourable to the growth of grapes. The purposes for which grapes are grown in Australia are three in number, viz.—(i.) for wine-making, (ii.) for table use, (iii.) for drying. The total area under vines in the several States from 1860 onwards is given in the following table:—

COMMONWEALTH VINEYARDS, 1860-1 TO 1906-7.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.		Acres.
1860-1 ...	1,584	1,138	—	3,180	335	There are no vineyards in Tasmania.	6,237
1865-6 ...	2,126	4,078	110	6,629	634		13,577
1870-1 ...	4,504	5,466	416	6,131	710		17,227
1875-6 ...	4,459	5,081	376	4,972	675		15,563
1880-1 ...	4,800	4,980	739	4,337	659		15,515
1885-6 ...	5,247	9,775	1,483	5,142	624		22,271
1890-1 ...	8,044	20,686	1,981	9,535	1,024		41,270
1895-6 ...	7,519	30,275	2,021	17,604	2,217		59,636
1900-1 ...	8,441	30,634	2,019	20,158	3,325		64,577
1901-2 ...	8,606	28,592	1,990	20,860	3,629		63,677
1902-3 ...	8,790	28,374	1,559	21,692	3,528		63,943
1903-4 ...	8,940	28,513	2,069	22,617	3,324		65,463
1904-5 ...	8,840	28,016	2,194	23,210	3,413		65,673
1905-6 ...	8,754	26,402	2,044	23,603	3,541		64,344
1906-7 ...	8,521	25,855	2,070	22,575	3,525		62,546

The area devoted to vines in the Commonwealth attained its highest point in the season 1904-5, when a total of 65,673 acres was reached. In the course of the two following seasons this area diminished by over 3000 acres, the decline being in evidence in all the States except Western Australia, in which there was a slight increase in 1905-6 and decrease in 1906-7.

The wine-growing industry in Australia, more particularly in Victoria and New South Wales, received a severe check on account of various outbreaks of phylloxera which took place in different parts of these States. With a view to its eradication extensive uprooting of vineyards in the infested areas was undertaken, while further planting within such areas, except with phylloxera-resisting vines, was prohibited.

2. **Wine Production.**—The production of wine in Australia has not increased as rapidly as the suitability of soil and general favourableness of conditions would appear to warrant. The cause of this is probably twofold, being in the first place due to the fact that the Australians are not a wine-drinking people and consequently do not provide a local market for this product, and in the second to the fact that the new and comparatively unknown wines of Australia find it difficult to establish a footing in the markets of the old world, owing to the competition of well-known brands. Active steps are being taken in various ways to bring the Australian wines under notice, and it may be confidently asserted that when their qualities are duly recognised the wine production of Australia will exhibit much more rapid development than has taken place within recent years. Particulars concerning the quantity of wine produced in the several States during the past six years are contained in the table given hereunder:—

AUSTRALIAN WINE PRODUCTION, 1901-2 TO 1906-7.

Season.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Commonwealth.
	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.		Gallons.
1901-2 ...	868,479	1,981,475	148,835	2,077,923	185,735	No production of wine in Tasmania.	5,262,447
1902-3 ...	806,140	1,547,188	100,852	2,145,525	158,853		4,758,558
1903-4 ...	1,086,820	2,551,150	38,558	2,345,270	138,371		6,160,169
1904-5 ...	928,160	1,832,386	60,433	2,625,430	185,070		5,631,479
1905-6 ...	831,700	1,726,444	66,926	2,845,853	208,911		5,679,834
1906-7 ...	1,140,000	2,044,833	65,016	2,441,504	195,660		5,887,013

3. **Imports and Exports.**—During recent years the importations of wine into the Commonwealth have fallen off considerably, the total value of the wine imported during 1906 being £106,133, as against a value of £161,945 in 1901. The principal countries of origin of wine imported into Australia are France and Spain, the greater portion of the sparkling wines coming from the former and of still wines from the latter country. Particulars relative to the importations of wine into the Commonwealth during the past six years are given hereunder:—

COMMONWEALTH IMPORTS OF WINE, 1901 TO 1906.

Year.	Quantity.		Value.		
	Sparkling.	Other.	Sparkling.	Other.	Total.
	Gallons.	Gallons.	£	£	£
1901	55,341	165,472	104,700	57,245	161,945
1902	46,824	134,513	80,941	46,828	127,769
1903	41,211	81,222	78,869	29,014	107,883
1904	38,738	70,982	69,643	27,227	96,870
1905	38,933	74,358	71,753	28,231	99,984
1906	43,324	71,980	81,448	24,685	106,133

The principal countries to which wine is exported from Australia are the United Kingdom and New Zealand; a small but fairly regular export trade being also carried on with India, Ceylon, Fiji, and the South Sea Islands. Details concerning the exports of wine from Australia during the six years (1901 to 1906) are given in the following table:—

COMMONWEALTH EXPORTS OF WINE, 1901 TO 1906.

Year.	Quantity.		Value.		
	Sparkling.	Other.	Sparkling.	Other.	Total.
	Gallons.	Gallons.	£	£	£
1901	2,936	863,147	6,972	122,751	129,723
1902	3,201	1,075,713	5,989	142,994	148,983
1903	2,194	718,284	4,161	101,016	105,177
1904	2,525	789,032	4,440	103,272	107,712
1905	2,749	937,932	4,990	107,988	112,978
1906	2,439	717,821	4,637	93,046	97,683

The sparkling wine included in the foregoing table consists mainly of foreign wine re-exported.

4. **Interstate Trade.**—A fairly extensive trade in wine is carried on between the States, South Australia being the principal exporting State. Particulars for the year 1906 are furnished hereunder:—

INTERSTATE TRADE IN WINE, 1906.

State.	Imports from other States of the Commonwealth.		Exports to other States of the Commonwealth.		Net Interstate Exports.*	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Gallons.	£	Gallons.	£	Gallons.	£
New South Wales	223,098	45,360	44,824	12,614	—178,274	—32,746
Victoria	89,534	20,138	114,508	30,274	24,974	10,136
Queensland	66,049	20,420	1,462	867	— 64,587	—19,553
South Australia	24,508	3,771	330,190	74,457	305,682	70,686
Western Australia	66,846	22,066	285	266	— 66,561	—21,800
Tasmania	22,054	6,956	820	233	— 21,234	— 6,723

* — Signifies net imports.

5. **Other Viticultural Products.**—In addition to grapes for wine-making purposes, large quantities are grown in all the States for table use, whilst, particularly in Victoria and South Australia, the drying of raisins and currants is also carried on. The quantities of table grapes grown in the several States during the past six seasons are as follows:—

TABLE GRAPES, 1901-2 TO 1906-7.

Season.	N.S.W.	Victoria.	Q'sland.*	Sth. Aust.†	W'st Aus.*	Tasmania.	C'wealth.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1901-2 ...	3,475	5,110	750	12,608	1,100	...	23,043
1902-3 ...	3,561	4,327	300	11,797	1,200	...	21,185
1903-4 ...	4,213	3,862	780	13,027	1,200	...	23,082
1904-5 ...	2,933	3,186	950	13,477	1,500	...	22,046
1905-6 ...	2,749	3,008	870	14,698	1,700	...	23,025
1906-7 ...	5,470	5,184	1,130	13,368	1,700	...	26,852

* Estimated. † Inclusive of grapes sold for wine-making.

Statistics of the quantities of raisins and currants dried are available for Victoria and South Australia, and are as follows for the past six years :—

RAISINS AND CURRANTS DRIED, 1901-2 TO 1906-7.

Season.	Raisins.		Currants.	
	Victoria.	Sth. Australia.	Victoria.	Sth. Australia.
	lbs.	lbs.	lbs.	lbs.
1901-2	3,083,665	822,080	285,157	382,256
1902-3	3,979,798	1,294,944	416,890	547,232
1903-4	5,986,060	1,463,056	838,955	1,165,472
1904-5	3,393,117	974,064	669,108	1,871,968
1905-6	4,813,240	1,334,928	717,156	2,225,440
1906-7	10,990,224	1,805,776	1,313,760	2,607.472

§ 15. Orchards and Fruit Gardens.

1. **Nature and Extent.**—Fruit-growing has made rapid progress in the Commonwealth during recent years, the area devoted thereto having increased in the past five years by no less than 16,993 acres. The States in which the increase was most marked were:—Tasmania, 6565 acres; Western Australia, 6441 acres; and Victoria, 3966 acres. During the same period the South Australian fruit-growing area increased slightly, that in Queensland was practically the same at the end as at the beginning of the period, while that in New South Wales exhibited a decline of nearly 2000 acres. The increased areas in Tasmania and Western Australia are mainly due to extensive plantings of apple trees with a view to the possibilities of the London market for fresh fruit. The total area devoted to orchards and fruit gardens in the several States is given hereunder :—

COMMONWEALTH ORCHARDS AND FRUIT GARDENS, 1901-2 TO 1906-7.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1901-2	48,107	50,055	13,243	16,315	6,076	11,485	145.281
1902-3	47,584	50,478	11,690	17,376	6,872	12,675	146.675
1903-4	48,316	51,357	13,784	18,725	7,938	14,134	154,254
1904-5	47,340	52,751	14,424	18,872	9,756	15,461	158.604
1905-6	46,615	52,274	13,970	19,320	11,026	16,519	159,724
1906-7	46,177	54,021	13,310	18,199	12,517	18,050	162.274

The varieties of fruit grown differ materially in various parts of the several States, and range between such fruits as the pineapple, paw-paw, mango, and guava of the tropics, and the strawberry, the raspberry, and the currant of the colder parts of the temperate zone. The principal varieties grown in Victoria are the apple, plum, peach, apricot, cherry, and pear. In New South Wales citrus fruits (orange, lemon, etc.) occupy the leading position, although apples, pears, peaches, plums, and apricots are also extensively grown. In Queensland the banana, the orange, the pineapple, the apple, the peach, the mango, and the plum are the varieties most largely grown. In South Australia, in addition to the apple, pear, peach, apricot, plum, orange, and lemon, the almond and the olive are also largely grown. In Western Australia the apple, orange, peach, pear, plum, fig, and apricot are the sorts chiefly grown, while in Tasmania, although the apple represents more than two-thirds of the area in that State devoted to fruit-growing, small fruits, such as the currant, raspberry, and gooseberry, are very extensively grown. The balance of the area is mainly occupied with the pear, plum, apricot, peach, and cherry.

2. **Oversea Imports and Exports.**—A very considerable fruit trade, both import and export, is carried on by the Commonwealth with oversea countries, the major portion of the importations consisting of dried fruits, while the bulk of the exports is made up of fresh fruits. Amongst the imports the principal dried fruits are currants, dates, sultanas, and raisins, and the principal fresh fruits bananas, oranges, lemons, and apples. The currants imported are mainly of Greek origin, the dates of Persian and Arabian, the sultanas of Turkish, and the raisins from the United States. Of the fresh fruit imported during 1906 the bananas were chiefly from Fiji, the oranges and lemons from Italy, and the apples from the United States and Canada. The dried fruit imported during the year was valued at £137,732, and the fresh at £82,655. The Commonwealth exports of dried fruits for 1906, representing in all a value of only £2752, consisted mainly of re-exports of currants, dates, etc. The fresh fruit exported during the year was valued at £173,190, and consisted mainly of apples. The principal countries to which these were sent were the United Kingdom, Germany, New Zealand, and Natal. Particulars concerning the oversea imports and exports of dried fruits for the six years 1901 to 1906 are as follows:—

COMMONWEALTH OVERSEA IMPORTS AND EXPORTS OF DRIED FRUITS, 1901 TO 1906.

Year.	Oversea Imports.		Oversea Exports.		Net Imports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	lbs.	£	lbs.	£	lbs.	£
1901	14,265,731	179,305	831,996	14,206	13,433,735	165,099
1902	15,312,229	165,926	942,342	14,024	14,369,887	151,902
1903	13,479,256	106,439	913,008	11,775	12,566,248	94,664
1904	14,267,310	107,117	1,729,725	18,497	12,537,585	88,620
1905	17,285,240	134,178	344,174	5,579	16,941,066	128,599
1906	15,659,620	137,732	187,710	2,752	15,471,910	134,980

Similar information with regard to the Commonwealth oversea trade in fresh fruit for the same period is contained in the table given hereunder:—

COMMONWEALTH OVERSEA IMPORTS AND EXPORTS OF FRESH FRUIT, 1901 TO 1906.

Year.	Oversea Imports.		Oversea Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Centals.	£	Centals.	£	Centals.	£
1901	*	45,955	*	167,926	*	121,971
1902	*	57,744	*	142,613	*	84,869
1903	91,976	47,303	371,158	216,992	279,182	169,689
1904	50,397	31,137	467,343	263,767	416,946	232,630
1905	49,659	32,654	393,982	207,418	344,323	174,764
1906	204,561	82,655	265,743	173,190	61,182	90,535

* Not available.

3. **Jams and Jellies.**—A small oversea trade in jams and jellies is carried on by the Commonwealth, the value of the imports for the year 1906 amounting to £8277, and of the exports to £24,009. The country of origin of the bulk of the importations is the United Kingdom, while the destinations of the exports are principally South Africa, Ceylon, and Fiji. Particulars relative to imports and exports for the six years 1901 to 1906 are as follows:—

COMMONWEALTH OVERSEA TRADE IN JAMS AND JELLIES, 1901 TO 1906.

Year.	Oversea Imports.		Oversea Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	lbs.	£	lbs.	£	lbs.	£
1901 ...	1,312,377	23,358	4,140,072	64,389	2,827,695	41,031
1902 ...	837,746	13,207	5,159,688	77,833	4,321,942	64,626
1903 ...	379,300	7,410	2,097,371	40,386	1,718,071	32,976
1904 ...	384,159	7,270	1,526,747	21,962	1,142,588	14,692
1905 ...	317,182	7,010	1,772,524	25,385	1,455,342	18,375
1906 ...	379,129	8,277	1,580,228	24,009	1,201,099	15,732

The trade carried on in jams and jellies between the States of the Commonwealth is a much more extensive one, the principal exporting States being Victoria and Tasmania, and the principal importing States Queensland and Western Australia. Details for the year 1906 are furnished in the table hereunder:—

INTERSTATE TRADE IN JAMS AND JELLIES, 1906.

State.	Imports from Other States of the Commonwealth.		Exports to Other States of the Commonwealth.		Net Interstate Exports.*	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	lbs.	£	lbs.	£	lbs.	£
New South Wales ...	3,832,064	54,953	4,423,755	57,983	591,691	3,030
Victoria	2,372,653	32,936	5,985,940	79,628	3,613,287	46,692
Queensland	5,640,051	73,534	326,196	5,210	— 5,313,855	— 68,324
South Australia ...	812,870	11,372	1,792,536	22,307	979,666	10,935
Western Australia ...	4,880,776	59,491	2,518	36	— 4,878,258	— 59,455
Tasmania	812,449	11,021	5,819,918	78,143	5,007,469	67,122

* — Signifies net imports.

4. **Preserved Fruit.**—Details concerning the quantities and values of preserved fruit imported and exported into and from the Commonwealth cannot readily be obtained, owing to the fact that in the Customs returns particulars concerning fruit and vegetables are in certain cases combined. The total value of fruit and vegetables, other than fresh and dried fruits, imported into Australia during 1906 was £35,660, and the corresponding value of exports was £23,282.

§ 16. Minor Crops.

1. **Nature and Extent.**—In addition to the leading crops which in the foregoing pages have been dealt with in some detail, there are many others which, owing either to their nature or to the fact that their cultivation has advanced but little beyond the experimental stage, do not occupy so prominent a position. Some of the more important of these are those which may be classed under the heads of Market Gardens, Nurseries, Grass Seed, Tobacco, Hops, and Millet, while the possibilities of cotton-growing in the tropical portions of the Commonwealth have in recent years received considerable attention, although the industry cannot yet be said to have assumed definite shape. The total area in the Commonwealth during the season 1906-7 devoted to crops of this nature was 79,689 acres, of which market gardens accounted for 33,787 acres.

2. **Market Gardens.**—Under this head are included all areas on which are grown mixed vegetables for sale. Where considerable areas are devoted to the production of

one vegetable, such for instance as the potato, the onion, the melon, the tomato, etc., these crops are usually not included with market gardens, but are shewn either under some specific head, or under some such general head as "Other Root Crops," or "All Other Crops." The area under market gardens in the several States of the Commonwealth during each of the six seasons 1901-2 to 1906-7 are given in the table hereunder:—

COMMONWEALTH MARKET GARDENS, 1901-2 TO 1906-7.

Season.	N.S.W.	Victoria.	Q'sland.	Sth. Aust.	Wst. Aust.	Tasmania.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1901-2 ...	7,834	8,752	2,328	9,005	2,142	1,746	31,807
1902-3 ...	8,263	7,937	2,171	9,489	2,262	1,893	32,015
1903-4 ...	8,754	8,455	2,563	9,964	2,463	1,685	33,884
1904-5 ...	8,827	7,904	2,099	10,160	3,538	1,759	34,287
1905-6 ...	9,119	7,333	2,089	10,688	3,550	1,778	34,557
1906-7 ...	9,550	7,906	1,953	8,379	3,789	2,210	33,787

The decline in the Commonwealth total for the season 1906-7 is due to the marked decrease in the area devoted to market gardens in South Australia, and to the smaller falling-off in the case of Queensland. In all the other States the area for 1906-7 was in excess of that for 1905-6.

3. **Grass Seed.**—In only three of the States is the growing of grass seed considered of sufficient importance to be specially shewn in the statistical returns. These States are Tasmania, Victoria, and Queensland, and the areas so cropped during 1906 were respectively 3720 acres, 1859 acres, and 1131 acres.

4. **Tobacco.**—The tobacco-growing industry is one which has experienced marked fluctuations in Australia, and one which at one time promised to occupy an important place amongst the agricultural industries of the Commonwealth. Thus, as early as the season 1888-9 the area under this crop amounted to as much as 6641 acres, of which 4833 were in New South Wales, 1685 in Victoria, and 123 in Queensland. This promise of prosperity was, however, not fulfilled, and after numerous fluctuations, in the course of which the Victorian area rose in 1895 to over 2000 acres, and that in Queensland to over 1000 acres, the total area under tobacco for the season 1906-7 was only 1400 acres, distributed as follows:—New South Wales, 601 acres; Victoria, 133 acres; and Queensland, 666 acres. This decline in production appears to have been due to the comparatively small demand which existed in Australia for the locally-produced leaf, and to the fact that the cost of production and preparation in the Commonwealth prevented the Australian leaf from obtaining a footing in the outside markets. Probably under more favourable circumstances, and with greater attention given to the production of leaf of the best quality only, the industry is one which will eventually, in Australia, assume considerable proportions. In all the States in which its cultivation has been tried the soil and climate appear to be very suitable for the growth of the plant, and the enormous importations of tobacco in its various forms into the Commonwealth furnish an indication of the extensive local market which exists for an article grown and prepared in such a manner as to meet with public requirements. The value of the net importations of tobacco into the Commonwealth during the year 1906 amounted to £545,782, comprising manufactured tobacco (£78,726), unmanufactured tobacco (£283,103), cigars (£129,105), cigarettes (£53,743), and snuff (£1105).

5. **Hops.**—Hop-growing in the Commonwealth is confined to Tasmania and some of the cooler districts of Victoria, the total area for the season 1906-7 being 1244 acres, of which 921 acres were in Tasmania and 323 acres in Victoria. The Tasmanian area, though still small, has increased rapidly during the past five years, the total for the season 1901-2 being only 599 acres. On the other hand, the Victorian area, which in 1901-2 was 307 acres, has reached only 323 acres in 1906-7. The cultivation of hops was

more extensive in Victoria twenty years ago than at present, the area devoted to this crop in 1883-4 being no less than 1758 acres. During the year 1906 the net importations of hops into the Commonwealth represented a weight of 1,385,624 lbs. and a value of £59,336. The total value of the net importations of hops into Australia during the past six years amounted to £316,260, thus indicating the existence of a regular and extensive local demand.

6. **Millet.**—Millet appears in the statistical records of three of the Commonwealth States, viz., New South Wales, Victoria, and Queensland. The total area devoted thereto in 1905-6 was 4323 acres, by far the greater portion, viz., 3765 acres, being in New South Wales. The particulars here given relate to millet grown for grain and fibre. That grown for green forage is dealt with in the section relating thereto.

7. **Nurseries.**—In all the States somewhat extensive areas are devoted to nurseries for raising plants, trees, etc., but statistics concerning the area so occupied are not available, and so far as they relate to forestry are given elsewhere.

8. **Cotton.**—Cotton-growing on a small scale has been tried in Queensland, but so far without marked success. The area under cotton during the season 1905-6, viz., 171 acres, had fallen by 1906-7 to 138 acres. Hopes are entertained that with the invention of a mechanical device for the picking of the cotton the industry will become firmly established, since the soil and conditions appear eminently suitable for the growth of this crop. Small areas in the Northern Territory have also been planted with cotton, while the tropical portions of Western Australia have long been regarded as suitable for its cultivation.

9. **Coffee.**—Queensland is the only State of the Commonwealth in which coffee-growing has been at all extensively tried, and here the results have up to the present time been far from satisfactory. The total area devoted to this crop reached its highest point in the season 1901-2, when 547 acres were recorded. Since then the area has continuously declined, and for 1906-7 amounted to only 256 acres.

10. **Other Crops.**—Miscellaneous small crops are grown in the several States, amongst which may be mentioned pumpkins, melons, tomatoes, rhubarb, artichokes, arrowroot, chicory, and flowers.

§ 17. Agricultural Colleges and Experimental Farms.

1. **Introduction.**— It has been thought preferable to refer to what may be called the effort in the direction of agricultural education, in this section rather than under the heading of education.

The virgin soil of a new country rendered attention to scientific methods of farming less necessary in the earlier days of Australian colonisation than at the present time, and it may also be said that the knowledge of scientific farming was then but little developed. In many parts of Australia, moreover, the regular rotation of crops, of vast importance to all agricultural countries, would appear hardly possible owing to the peculiar climatic conditions. These conditions may, however, be utilised, or made less adverse by a more skilful tillage of the soil, and the restoring to it or adding to it such chemical constituents as may be necessary for particular crops. The fostering of industries, other than those pertaining merely to the production of cereals, is also becoming a matter of consequence, and considerable extensions of knowledge have been made in the past few years in respect to the co-ordination of other industries with agricultural industry. In most of the States agricultural colleges and experimental farms have been established with a view to promoting agriculture and of establishing improved and more scientific systems of stock-breeding and dairying. In these colleges and in some of the farms provision is made for the accommodation of pupils, to whom both practical and theoretical instruction is given by experts in various branches of agriculture. Analyses of soils and fertilisers are made, manures are tested, and elementary veterinary science, etc., is taught, while general experimental work is carried on with cereal and other crops, not merely for the purpose of shewing that it is practicable to produce certain crops in a given place, but also to shew how it is possible to make farming pay best in that locality. Opportunities are afforded for practice in general agricultural work, and instruction is given in the conservation of fodder, in cheese and butter making, in the management, breeding, and preparation for the market of live stock, in the eradication of pests and weeds, and in the carpenters,' blacksmiths', and other trades.

Travelling expert lecturers are sent to the various agricultural and dairying centres, and there is a wide distribution of periodical agricultural gazettes and bulletins on matters of importance at special seasons. In some of the States agricultural instruction is given at technical schools, while experimental elementary agriculture—practically a form of nature study—is taught at many of the primary schools. Courses for the instruction of school-teachers have been established during the holiday recesses at some of the agricultural colleges.

2. New South Wales.—In order to meet the demand for agricultural training, and for the purpose of conducting experiments in various branches of agriculture and of disseminating agricultural knowledge, an agricultural college and farm and twelve experimental farms have been established by the New South Wales Government. Theoretical instruction in agriculture, with practical illustrations, forms part of the curriculum of the Sydney Technical College. At the Hurlstone Continuation College there is a special course in both theoretical and practical agriculture for teachers. Instruction in "nature knowledge" is given in the State primary schools, many of which have their own experimental plots. As a means of further encouraging the study of agriculture the Department of Public Instruction has a travelling inspector in agriculture, whose duty it is to visit the country and metropolitan schools, giving lectures on the value, necessity, and advantages of agricultural knowledge, and giving practical demonstrations wherever practicable.

(i.) *The Hawkesbury Agricultural College*, situated near the town of Richmond, on the Hawkesbury River, about thirty-eight miles from Sydney, is under the control of the Agricultural Department and provides accommodation for about 200 students. Attached to the college is a farm of 3546 acres, of which 1166 acres were under cultivation in the year 1906.

(*a*) *The course of instruction* comprises the principles of agriculture; the breeding, rearing, feeding, and management of live stock; agricultural chemistry, botany, vegetable pathology, and entomology; veterinary science and practice; bacteriology; meteorology; agricultural mechanics; elements of surveying and farm book-keeping; all kinds of practical farm work, including the use of farm implements and machinery; dairying, carpentry, saddlery, blacksmithing, and elementary agricultural engineering; the management of poultry and bees and all branches of orchard and garden work. The course extends over two years, and is divided into four sessions. At the end of the course students may undergo examination for the purpose of obtaining the college diploma.

(*b*) *Experimental Work.* In addition to the education of the students extensive experimental operations are carried on at the farm for the general benefit of agriculturists. Large numbers of farmers visit the institution in quest of information. During the winter vacation arrangements are made for a winter school for farmers. This school has been in operation for two years and about eighty farmers have attended each year. The course extends over one month.

(ii.) *Experimental Farms, Orchards, and Vineyards.* Experimental farms have been established at Wagga, Bathurst, Coolabah, Grafton, Glen Innes, Cowra, Wollongbar, and Pera. There is an irrigation farm at Moree and a dairy stud farm at Berry, while viticultural stations have been established at Howlong and Lake Macquarie. At the farms at Wagga, Bathurst, Wollongbar, and Berry, accommodation is provided for students. The educational work undertaken at the four farms where students are received partakes more of a practical nature and less of the academic character. Scientific lectures are given as far as possible, and the students, at the end of the full course, undergo an examination for the purpose of obtaining the farm certificate. The fees payable by students are not large, amounting, as a rule, to about £25 inclusive. With regard to the farm operations, the objects of each farm are to demonstrate the most economic and effective systems of producing and harvesting crops; to carry out experiments to determine the suitability or otherwise of crops, not only for the district where the farm is situated but for other districts having similar climate and soils; and to carry out scientific agricultural experiments generally.

(iii.) *Particulars of Agricultural College and Experimental Farms.* The following table shews the number of students at the Hawkesbury College and at the four experimental farms at which students are received for each year from 1901 to 1906 inclusive:—

NEW SOUTH WALES.—NUMBER OF STUDENTS AT GOVERNMENT AGRICULTURAL COLLEGE AND EXPERIMENTAL FARMS.

Name.	1901.	1902.	1903.	1904.	1905.	1906.
Hawkesbury Agricultural College ...	102	116	120	153	144	201
Wagga Farm	7	18	29	40	41	40
Bathurst Farm	6	15	15	23	18	25
Wollongbar Farm	...	2	3	11	14	9
Berry Dairy Stud Farm	...	5	5	3	11	7
Total	115	156	172	230	228	282

The following table gives particulars of the Hawkesbury College and of the twelve experimental farms for the year ended the 31st March, 1906;—

NEW SOUTH WALES.—PARTICULARS OF GOVERNMENT AGRICULTURAL COLLEGE AND EXPERIMENTAL FARMS AT THE 31ST MARCH, 1906.

Name of Farm.	Total Area of Farm.	Total Area Cultivated.	Area under Cereals and Hay.	Area under Fruit-trees and Vines.	Number of Students.	Number of Hands Employed.	Value of Plant and Machinery.	Value of Produce for the Year.
	Acres.	Acres.	Acres.	Acres.			£	£
Hawkesbury ...	3,546	1,166	517	41	201	32	2,215	5,000
Wagga ...	3,300	818	408	95	40	19	1,435	4,828
Bathurst ...	695	403	243	37	25	31	1,130	1,500
Coolabah[1] ...	2,200	178	65	3	...	2	480	50
Moree[2] ...	79	40	27	6	...	3	160	70
Wollongbar ...	263	248	10	2	9	18	950	820
Berry[3] ...	323	60	14	...	7	4	330	400
Howlong[4] ...	250	84	26	56	...	5	500	60
Grafton ...	2,064	35	33	...	...	8	64	135
Glen Innes ...	1,250	141	99	20	...	5	160	486
Cowra ...	936	85	83	1	...	2	350	150
Pera	67	43	10	25	...	1	100	28
Lake Macquarie[5] ...	...	...	...	...	...	...	...	...

1. The total area of this farm is 15,000 acres, but 12,800 acres have been let for grazing purposes.
2. Irrigation farm. 3. Dairy Stud farm. 4. Viticultural station.
5. Viticultural station; particulars not available.

At the Wagga farm a specialty is made of growing seed wheats and fruits for drying, and of breeding dairy stock and swine. The Bathurst farm is devoted to the cross-breeding of sheep, fruit-growing, cereal culture, and general mixed farming. At Coolabah experiments in the dry districts have been carried on, while at Wollongbar experiments have been made on a large scale with grasses for the grazing of dairy cattle, and steps have been taken to assist the dairying industry in the surrounding districts.

(iii.) *Other Forms of Agricultural Instruction.* Agricultural education at the Technical College at Sydney includes the following studies:—The character and prospects of Australian agriculture; climate and rainfall; selection of land, clearing, fencing, building and draining; irrigation and water storage; the cultivation of crops; manures; live stock; dairying; sheep and wool; farm and dairy chemistry; the treatment of fungus and insect pests; orcharding and fruit preserving; vine growing and wine making; pigs, poultry and bee-keeping; and horticulture and home-gardening. Elementary agriculture forms the first year's course, and advanced agriculture is dealt with during the second year. With the object of giving lectures and demonstrations on various subjects, the scientific and expert staff of the agricultural laboratories in Sydney as well as those attached to the college and farm staffs are from time to time placed at the disposal of the agrarian community, and are constantly in demand by agricultural societies, farmers' and settlers' associations, and other similar bodies. The publication of the *Agricultural Gazette* is a valuable means of imparting knowledge on agricultural matters. Seeds grown at the experimental farms are distributed from a central depôt in Sydney for trial purposes among the farmers, and are also available to State school teachers for use in connection with the experimental plots, which are now attached to many of the primary schools throughout the State. The only condition in the granting of such samples is that the recipients shall in due course forward a report of their experiments to the Agricultural Department.

3. **Victoria.**—In 1884, the Agricultural Colleges Act, passed to make provision for the establishment of agricultural colleges and experimental farms in Victoria, provided for the permanent reservation from sale of 150,000 acres of Crown lands by way of endowment of agricultural colleges and experimental farms, which, together with other lands reserved as sites for such institutions prior to the passing of the Act, are vested in three trustees appointed by the Governor. Provision was made for the appointment of a Council of Agricultural Education, consisting of eleven members, five of whom are elected by the members of the Agricultural Societies of the State, five are nominated by the Governor, whilst the Secretary for Agriculture is also a member of the Council and its Treasurer. Two agricultural colleges and five experimental farms, orchards and vineyards have now been established in different parts of the State under this Act. There are two Agricultural High Schools under the control of the Education Department, while elementary experimental agriculture is taught at many of the State primary schools. Instruction in agriculture is also given at the technical schools at Melbourne and Bairnsdale.

(i.) *Agricultural Colleges.* The two colleges are situated respectively (*a*) at Dookie, in the Goulbourn Valley district, and (*b*) at Longeronong, in the Wimmera district.

(*a*) *The Dookie Agricultural College*, with its farm of 4846 acres, is situated in a rich agricultural country, eminently suited for farming, grazing, viticulture, and horticulture. The college buildings were erected during 1886, and since then numerous additions have been made, so that at the present time accommodation is provided for seventy students, and provision will shortly be made to accommodate thirty more. The farm is equipped with modern dairy and cowbyres, piggeries, poultry plant, cellars, etc., also large stables and stallion boxes, shearing shed, slaughterhouse, mechanics' and carpenters' shops, silos, barn, sheds, cattle and sheep yards, steam and oil engines, and numerous modern implements of agriculture. Half the students' time is devoted to practical work on the farm, and half to scientific, theoretical, and other work. On the farm the student is taught to manage live stock, handle implements and machinery, work the separator, drive engines, prune vines and trees, break-in horses, shoe horses, mend a break, and erect buildings. At the college instruction is given in determining the fertility of soils, the effects of manuring, the importance of drainage, the improvement of stock and crops, irrigation, and the treatment and eradication of diseases in plants and animals. Considerable attention is paid to experimental work in connection with cereals. The rearing of new varieties of wheat, suitable for the different parts of the State of Victoria, has special attention paid to it. Manurial tests are carried out each year and the results published for the benefit of the farmers. The stock comprise over fifty horses, good herds and flocks of pedigreed cattle, sheep, pigs, and poultry. The annual charge made to students is £28 per head inclusive.

(b) *The Longerenong Agricultural College*, reopened in 1905, can accommodate forty students. The farm contains an area of 2386 acres, and is particularly adapted for demonstrating what can be done in farming with irrigation, water being supplied by one of the channels of the Western Wimmera Irrigation Trust. Including fallow land, about 1000 acres are under cultivation each season; the orchard and vineyard cover an area of thirty acres. In addition to a number of well-bred horses and cattle, there is a small flock of pedigree sheep. Lamb-raising is one of the principal industries. The course may be taken by either resident or non-resident students, the former doing both class and farm work, while the latter attend for class work only on alternate days. The syllabus of instruction includes the principles and practice of agriculture, agricultural chemistry, agricultural physics and mechanics, botany, entomology, geology, surveying, book-keeping, mathematics, and English. The fees for resident students amount to £18 5s. per annum, and for non-resident students to £5 per annum.

(ii.) *Agricultural High Schools and Technical Colleges.* During the year 1907 the Education Department opened two agricultural high schools[1]—one at Warrnambool and the other at Sale—each having accommodation for about fifty pupils. Similar institutions are to be established in the near future at Wangaratta, Ballarat, and Shepparton, the sites having already been acquired, the direct aims being to give to boys such an education as will direct their attention specially towards the land as a means of gaining a livelihood; to promote agriculture as an occupation and a profession; to provide a central institution for the dissemination of agricultural information by evening lectures, conferences, and literature; to superintend the Government experimental plots, to record and interpret their results; and to provide a summer school in agriculture for primary school teachers. The course of instruction comprises agricultural science, climatology, physics, chemistry, geography, drawing, English, mathematics, and farm practice. At the Working Men's College at Melbourne lectures are given on agricultural chemistry, wool-classing, poultry-breeding, etc., and at the School of Mines at Bairnsdale a complete course in theoretical and practical agriculture is given, extending over a period of two years. Agricultural courses are also held at the Ballarat School of Mines and at the Gordon College, Geelong.

(iii.) *Experimental Farms.* Experimental farms, orchards, and vineyards have been established at Rutherglen, Wyuna, Whitfield, Heytesbury, and Burnley, demonstrating different methods of cultivation, manuring, stock-breeding, the cultivation of economic plants, the improvement of varieties of cereals by selection and cross fertilisation, and the testing of fodder plants. Six demonstration orchards have been established to shew the effect of proper cultivation and pruning of fruit trees in various districts and the suitability of the trees for the district. At Burnley Horticultural Gardens students are trained in horticulture. Areas have been planted at Rutherglen and Wahgunyah with phylloxera-resistant vines for distribution to vignerons to enable them to reconstitute their vineyards. 150,000 vines were distributed last season.

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[1] These are not agricultural universities.

(iv.) *Other Forms of Agricultural Instruction.* Since the establishment of butter factories throughout Victoria a travelling dairy formerly utilised has been discontinued. Demonstrations in cheese-making are, however, still given by an expert, while other experts also visit the factories and supply information and instruction. Practical lessons are also given by experts in fruit-preserving, drying, candying, also in flax manufacture, cider-making, poultry-dressing, and the preparation of poultry for export. In addition to these lectures a system of short course classes in agriculture has been established. These classes are held at various centres and lectures are given on the principles of agriculture, the care of farm stock, sheep-breeding and management, dairy-farming, agricultural engineering, and orchard and garden work. At the end of the year 1907 these classes had been established at twenty-seven centres, and the total number of students attending the lectures was 1236. In about 130 of the State-schools of Victoria elementary agriculture is taught. In connection with these schools there are experimental plots varying in area from half an acre to rather less than a quarter of an acre. Experiments are conducted to shew the benefits of cultivation, drainage, and rotation of crops, to ascertain fodder and other crops suitable for the locality, and to test manures. In some of the schools milk-testing is taught, and the economic native woods, common weeds, and insects are dealt with.

4. **Queensland.**—Organised experimental agriculture in Queensland dates from the establishment of the Department of Agriculture and Stock, but such work as has been done in connection with stock-breeding, other than that carried on by private individuals, has been of later birth, and has been confined to dairy stock and draught horses. Agriculture in Queensland in the early nineties was upon the well-defined lines of the other States, so that the knowledge to be gained as to what could be profitably adapted to Queensland, with its varied climate and rainfall, covered a wide field. Instructors were appointed conversant with the different lines of agriculture, of which grain cultivation, dairying, fruit growing, tobacco cultivation, and tropical agriculture, such as sugar, rubber, and spices, are the most important. This has been followed by the establishment of an agricultural college, of farms in the temperate parts of the State, and of nurseries in the tropical parts. With wheaten grain a system of experiments has been carried out through years with the distinctive object of evolving a type of wheat adapted for Queensland, and as far as possible resistant to the attacks of rust. In dairying, a commencement was made by despatching to the different farming centres properly equipped travelling dairies with the latest appliances. The export of Queensland dairy produce has arisen through this effort. No travelling dairies are, however, now employed. A fruit farm has been established, at which fruits suitable for or likely to adapt themselves to the Queensland climate and conditions have been experimented with during a series of years. To cope with the insect and fungus pests to which such fruits are peculiarly susceptible, careful inspection is made of fruits in the markets and for export, and every effort is put forth to prevent the introduction of fresh diseases and to exterminate those which are already within the State.

(i.) *Gatton Agricultural College.* In 1897 the Queensland Government established an agricultural college at Gatton, about fifty-eight miles west of Brisbane, with an associated farm of 1692 acres. Accommodation is provided for sixty residential students. Instruction is afforded in various branches of practical farming and theoretical agriculture, the practical feature being regarded as the more important. Elementary science and physics, dairying, gardening, elementary chemistry, veterinary science, horticulture, stock-breeding, elementary bacteriology, and agricultural chemistry are also taught. A dairy herd of the best known and favoured breeds has been established at the college, whence the young stock of pure breed have been distributed throughout the State. A course for the instruction of school-teachers during the summer recess has been established at the college by the Education Department, and the knowledge thus acquired is imparted by the teachers, not only to the school children, but also to the farmers and dairymen. On the 30th June, 1907, there were fifty-seven students on the books of the college.

(ii.) *Experimental Farms and Technical Colleges.*

(*a*) *Experimental Farms* are carried on by the Government at Westbrook (near Toowoomba), Gindie, Biggenden, Hermitage (near Warwick), Bungeworgorai, and Stanwell. At the Hermitage farm arrangements were made during the year 1906, whereby instruction in general farm work is given to a number of boys who, from circumstances, are unable to receive the advantages of the college course, and this system has now been applied to the farm at Biggenden. The pupils are apprenticed for a term of three years and are instructed in experimental and acclimatisation work, stock-breeding, hybridising, orchard work, etc. These youths are paid nothing for the first twelve months, £12 for the second, and £24 for the third. A State nursery has been established at Kamerunga, near Cairns, and a sugar experimental station at Mackay, but the State tobacco farm at Texas was relinquished during 1906.

(*b*) *Technical Colleges.* At the technical colleges established in various parts of the State instruction is given in certain agricultural subjects. Thus, at Brisbane, Ipswich, and Maryborough botany, milk and cream testing, fruit preserving and pickling are considered, and at Brisbane wool-classing also. At Bundaberg, Gympie, Rockhampton, South Brisbane, and Toowoomba milk and cream testing are taught, whilst instruction is given in dairy-farming at Warwick.

(iii.) *Other Forms of Agricultural Instruction.* Free lectures are from time to time given at different centres by the Agricultural Department's technical instructors on all agricultural, horticultural, and pastoral subjects. A monthly *Agricultural Journal* is issued, in addition to pamphlets on special subjects. Seeds which are new to the country, and which have not been cultivated there before, are distributed free. In the primary schools instruction is given in nature study and in economic gardening, prizes being awarded both for practical and theoretical work.

5. **South Australia.**—To this State belongs the honour of starting the first experimental farm in the Commonwealth. As far back as the year 1879 a resolution was passed by the local Parliament in favour of the establishment of a School of Agriculture, with an experimental farm, under the charge of a professor of agriculture. Active operations in this connection were commenced in 1882, when the first series of plots of wheat were sown at Roseworthy. Experimental work, chiefly directed towards improving the wheat yield, has been developed along three main lines, viz.: (*a*) The improvement of varieties of wheat, (*b*) the improvement of methods of cultivation, and (*c*) the use of manures. The central agricultural bureau, established at Adelaide under the control of an Advisory Board, had on the 30th June, 1906, a membership of nearly 1900 persons distributed amongst 115 branches. It assists farmers by the dissemination of knowledge; by helping to introduce new economic plants; by improving the breed of stock; and it acts as a means of keeping the Agricultural Department in touch with the producers. The branches of the bureau hold meetings at regular intervals in their several districts, ideas and methods as regards practical subjects are interchanged, and discussions are held on matters of general interest to agriculturists. The Agricultural Department issues a monthly journal, and from time to time special bulletins and pamphlets regarding cultivation, manuring, diseases of stock, etc.

(i.) *The Roseworthy Agricultural College.* The Roseworthy College, situated seven miles from Gawler, and affording accommodation for 50 resident pupils—who must be at least 16 years of age on admission—has two main objects, viz.: (*a*) To train young men for the practice of agriculture, horticulture, and viticulture, and (*b*) to conduct experiments with a view to the advancement of the rural industries in South Australia.

The attached plot is 1550 acres in extent. The course extends over a period of three years, the fees being £30 per annum. The curriculum includes both scientific and technical subjects, viz., chemistry, physics, anatomy, physiology, botany, and entomology; agriculture, viticulture, œnology, fruit culture, veterinary science, dairying, bookkeeping, surveying, wool-classing, and general rural economy.

(ii.) *Experimental Farms.* During the year 1905-6 three experimental farms were handed over to the Agricultural Department, namely, the homestead block at Kybybolite of 1060 acres, 40 acres of reclaimed swamp at Murray Bridge, and 80 acres at Parafield. On these, experiments are carried on with regard to the growing of different varieties of wheat, oats, and barley, both for grain and for hay crops, and also with regard to the growing of root and fodder crops. Investigations cover the manuring of crops, different methods of cultivation, rotation of crops, irrigation, the hybridisation and selection of cereals, feeding of animals, fruit-growing, and wine-making.

(iii.) *Other Forms of Agricultural Instruction.* Lectures are given by the experts of the Agricultural Department under arrangement with the School of Mines at Adelaide and at country branches of that institution, while practical demonstrations are also given by the horticultural instructor. No instruction is given by travelling dairies, but the dairy instructor visits districts as arranged and gives instruction and advice on all matters pertaining to dairying. Lectures and practical demonstrations are given by experts all over the State, principally under the auspices of the agricultural bureau or local committees. Though no systematic scheme for agricultural teaching in the primary schools exists, numbers of individual teachers have taken up experimental elementary agriculture —practically a form of nature study—with satisfactory results. Seed of special varieties of wheat is from time to time distributed gratis to applicants; also seed of barley and oats, and of fodder plants of a special character, likely to suit prevailing conditions.

6. **Western Australia.**—A considerable amount of developmental work has been done of late years towards the promulgation of agricultural knowledge on the three State farms at Chapman, Narrogin, and Hamel.

(i.) *The Chapman Farm* stands in the centre of a vast stretch of country lying twenty-five miles north of Geraldton and fifteen miles east of Northampton. Until five or six years ago, the expanse of land referred to was almost exclusively devoted to grazing, and it was mainly to prove its capabilities and thus promote settlement, that the farm was established. The whole of the available land has since been selected, and settlement has outrun the extent of the area in question. Collaterally the object of the farm has been extended; it has become the medium whereby practical instruction in farming is provided for intending settlers in quest of a training which will fit them for their work, and on the 30th June, 1906, seventeen students, by whom all the farm work was done, were resident thereat. The farm is well watered by the Chapman River and by wells served by windmills; it is securely fenced and subdivided. Stud stock are kept and bred, the young stock being sold annually. The stock consists of a stud of Suffolk Punch horses, a herd of Dexter Kerries, a flock of pure-bred Shropshire ewes and rams, Angora goats, and various kinds of poultry.

(ii.) *The Narrogin Farm.* The initial object of this farm was to practically demonstrate the larger return consequent upon improved cultivation of the land; to raise stud-stock for the benefit of the farmers, to raise clean seeds for sowing their land, and to offer a field for training farmers' sons and others wishing to settle on the land. Students are admitted at an annual fee of £10, they are taught the practical farm work, such as handling live stock, and the use of various farm implements. Lectures are given at intervals by the scientific staff attached to the Agricultural Department. Experimental work is a merely subsidiary feature. The total area is 2826 acres. On the 30th June, 1906, there were fifteen students, a number which has increased since that date.

(iii.) *The Hamel State Farm.* Hitherto only experimental work has been carried out on the Hamel State farm, consisting chiefly of testing new varieties of grasses and fodder plants, cereals, fruits, and tubers. Students are not taken on at the farm, the work having been carried out chiefly by a gang of good conduct prisoners.

(iv.) *Other forms of Agricultural Instruction.* The Government dairy expert is continually travelling and lecturing on dairying, and lectures are also given by the field-officer, the horticultural and viticultural experts, and others. Demonstrations are also given in the cultivation of vines and fruit trees, including budding, grafting, and pruning. A regular monthly journal and bulletins at frequent intervals on matters of importance are issued by the Agricultural Department. The distribution of seeds and plants is now practically confined to seeds of fodder plants. While there are no specific regulations, recipients are asked, with a view to collating information as to the most suitable varieties in different localities, to report results. Experimental plots are conducted at some of the State schools under the direction of the teachers. A special feature of the entomological work carried out by the Department of Agriculture is the collection, breeding, and distribution of parasites on insect pests. This work has been carried out with excellent results, several pests which were formerly a great source of trouble and expense being now practically non-existent. Experimental farms have been established at Brunswick and Nangeenan.

7. **Tasmania.**—In Tasmania there is a Council of Agriculture consisting of eleven members, whose duties are to collect and publish information of every kind calculated to prove beneficial to colonists engaged in agriculture, such as suitableness of various districts for growth or production of animal and vegetable products, information respecting plants, methods of cultivation, of breeding and feeding animals, and how to best improve the same; to prevent as far as possible the introduction and spread of diseases and pests, and to publish bulletins, abstracts, and reports containing all such information as may be desirable. Other matters embrace the employment of experts in any branch of agricultural science, distribution of plants and seeds for experiment, and the establishment of local boards of agriculture in different parts of the State. Lectures are given by the experts from time to time, and useful information and knowledge is diffused by means of the monthly gazette published by the Council, and also by means of special bulletins. There are no agricultural colleges nor experimental farms, and practically no agricultural teaching is given in the elementary schools.

8. **Organisation of Agricultural Departments and of their Work.**—The extended table on pages 344 to 347 gives an aperçu of the entire organisation of agricultural departments and of the effort in the direction of agricultural education in Australia.

§ 18. Government Loans to Farmers.

1. **Introduction.**—All the Australian States, excepting Tasmania, have established systems under which financial aid is rendered to agriculturists by the Government. The principle upon which such aid is founded was probably first practically applied in Germany, viz., in the year 1770, when the *Landschaften Bank* was created. The establishment of the *Crédit Foncier* somewhat later in France was a creation of a similar character. This latter is an institution designed to enable house and land owners to raise money on mortgage at a low rate of interest, with facility for repayment by an annuity including redemption of the capital. It dates from 1852, but the mortgage bank known as the *Caisse Hypothécaire*, which, after a struggling existence, was finally liquidated in 1846, was based essentially on the same principle. Over the operations of the Credit Foncier, created under governmental patronage and invested with such special privileges as to virtually constitute it a monopoly, the Government exercised a direct control, viz., by appointing its governor and its two deputy-governors. The Credit Foncier could lend money only on a first mortgage, and to the amount of one-half of the estimated value of houses and farms, and one-third of that of vineyards, woods, and other plantations, and the commission charged could not exceed six-tenths per cent.

The system developed and adopted in the Commonwealth, with the object of assisting farmers to make improvements or to develop or utilise the agricultural or pastoral resources of the land, is analogous. Though not yet adopted in Tasmania the Government of that State has its introduction in contemplation, on somewhat similar lines to those followed in Victoria.

2. **Particulars of Transactions in Each State, 1904-7.**—The subjoined table gives particulars of transactions in each State in which advances to farmers are made, for the years 1904 to 1907, inclusive :—

STATE GOVERNMENT ADVANCES DEPARTMENTS. PARTICULARS OF LOANS TO FARMERS, 1904-7.[1]

State.	Total Advanced.				Balance Due.			
	1904.	1905.	1906.	1907.	1904.	1905.	1906.	1907.
	£	£	£	£	£	£	£	£
New South Wales...	502,828	563,596	647,623	702,099	392,745	406,405	411,208	420,531
Victoria	1,749,409	1,890,299	2,021,333	2,111,308	1,321,510[3]	1,350,515[3]	1,328,547[3]	1,225,805[3]
Queensland ...	21,020	39,378	98,484	129,361	20,370	38,417	94,268	112,216
South Australia ...	889,976	925,071	1,011,110	1,109,362	602,641	582,214	602,365	613,730
West Australia ...	215,000	297,600	394,164	525,177	189,626	250,503	323,464	420,534
Commonwealth ...	3,378,233	3,715,944	4,172,704	5,377,307	2,526,892	2,628,054	2,750,852	2,792,816

State.	Annual Profits.				Accumulated Profits.			
	1904.	1905.	1906.	1907.	1904.	1905.	1906.	1907.
	£	£	£	£	£	£	£	£
New South Wales[2]	...	...	...	...	...	...	...	...
Victoria	6,901	7,330	7,260	6,430	41,177	48,507	55,768	62,198
Queensland ...	84	53	444	...[2]	...	...	246	...[2]
South Australia ...	3,050	3,116	3,314	3,598	15,552	18,669	21,984	25,582
West Australia ...	2,036	2,409	3,754	3,988	3,024	5,433	9,187	13,557
Commonwealth[4] ...	12,071	12,908	14,772	...	...	...	...	...

1. Compiled from figures furnished by the Government Savings Banks of Victoria. 2. Returns not available. 3. Balance after deduction of special principal payments in advances (see subsection 7, section 41, of the Savings Banks Act, 1896). 4. Exclusive of New South Wales.

3. **New South Wales.**—New South Wales adopted the principle of advances to settlers later than most of the other States. It was not until 1899 that the Advances to Settlers Act was passed, having for its object the rendering of financial assistance to settlers in necessitous circumstances. Under this Act loans to farmers were authorised but the amount advanced to any one person was not to exceed £200, and was to be repaid in ten years, together with interest at 4 per cent. per annum. A Board, called the Advances to Settlers Board, was appointed to deal with applications for advances and to decide whether they should be granted. In the year 1902 an Amending Act increased the advance limit to £500, and extended the time limit to thirty-one years. The Government Savings Bank Act of 1906 repealed previous Acts on the subject, and provided that all property held by the Advances to Settlers Board should be vested in the three Commissioners appointed under the Act. An Advances Department of the Savings Bank was constituted and authority given to issue debentures to the amount of £305,000, viz., the amount of stock issued under the Advances to Settlers Acts and held by the Savings Bank. This Bank was made liable to the Treasury for the amount of £12,050, being the amount issued to the public under these Acts.

(i.) *Security on which and Objects for which Advances are made.* The Commissioners are authorised to issue debentures to the amount of £2,000,000, bearing interest at a rate not exceeding 4 per cent., and to lend moneys upon mortgage (*a*) of a fee simple estate in any land in the State, or (*b*) of conditional purchases, homestead grants or selections, settlement leases or purchases, and conditional purchase leases. Loans may be made for any of the following purposes :—

(For continuation see page 348.)

MAIN FEATURES OF ORGANISATION.	NEW SOUTH WALES.	VICTORIA.
I. **Designation of Minister** by whom department is controlled	Minister for Agriculture	Minister of Agriculture
II. **Staff, on 30th June, 1907**—*Agricultural Branch*—		
Administrative	9	4
Professional	21	13
Clerical	12	12
Temporary	181	73
General	22	125
Total	245	227
Stock and Brands Branch—		
Administrative	1	2
Professional	1	...
Clerical	13	6
Temporary	25	35
General	56	5
Total	96	48
III. **Expenditure,** 1906-7	£60,134	£103,594
IV. **Facilities for Agricultural Education**—Places at which are established (i.) Agricultural Colleges	Hawkesbury	Dookie and Longerenong
(ii.) Technical Schools at which Agriculture is taught	Sydney Technical College Hurlstone Continuation Col.	Working Men's College, Melb Bairnsdale School of Mines. Ballarat School of Mines. Gordon College, Geelong
(iii.) Experimental Farms, Orchards, and Vineyards	Farms: Hawkesbury, Bathurst, Wagga, Coolabah, Grafton, Cowra, Glen Innes, Wollongbar, Moree Irrigation Farm, Berry Dairy Stud Farm, Pera Bore Farm, Howlong and Lake Macquarie Viticultural Stations	Experimental Farms:—Dookie, Longerenong, Whitfield, Heytesbury, Rutherglen Viticultural Farm, Wyuna Irrigation Farm, Burnley Horticultural Gardens
Nature and Extent of— (i.) Agricultural Teaching given in Primary Schools	Elementary Principles of Agriculture taught in most of the schools. Experimental plots in many schools. Travelling instructor in agriculture visits schools, giving lessons and lectures	Agriculture is taught in about 130 State schools. Experiments conducted to shew benefits of cultivation, drainage, etc., of crops, test manures, etc., and milk testing Agricultural high schools at Sale and Bairnsdale
(ii.) Agricultural Teaching given in Technical Schools	Comprises agricultural principles, climate and rainfall, selection of land, clearing, building, etc., draining, irrigation, crops, manures, dairying, sheep, wool and wool-classing, orchards, pigs, poultry, etc.	Lectures given at Working Men's College on agricultural chemistry, wool-classing, poultry breeding, etc.
(iii.) Work undertaken in Agricultural Colleges	Same as above and chemistry, botany, entomology, veterinary science, bacteriology, meteorology, surveying, carpentry, blacksmithing, bees and poultry, etc.	Complete course in practical and theoretical agriculture, extending over two years
(iv.) Work undertaken on Experimental Farms, Orchards and Vineyards	Producing and harvesting crops, production and improvement of suitable seeds, etc.	Experiments in methods of cultivation, manuring, stock-breeding, improving cereals by selection and cross fertilisation, testing of fodder plants. Irrigation at Longerenong; horticulture at Burnley; vines at Rutherglen and Wahgunyah
(v) Instruction given by Travelling Dairies, etc.	Nil	None now employed. Demonstrations in cheese-making given by experts: also practical instruction in fruit preserving, drying, candying, flax manufacture, cider making, poultry dressing, etc

QUEENSLAND.	SOUTH AUSTRALIA.	WESTERN AUSTRALIA.	TASMANIA.
Secretary for Agriculture	Minister of Agriculture	Minister for Agriculture	Minister of Agriculture
*22	1	1	2
147	14	...	6
...	7	15	3
...	...	...	...
97	12	24	1
†266	34	40	†12
	2	...	
	58	2	
	3	...	
	..	..	
	1	11	
	64	13	
£59,445	£19,839	£49,159	£4,950
atton	Roseworthy	Nil	Nil
Brisbane, Bundaberg, Ips-rich, Gympie, Maryborough, ockhampton, S. Brisbane, oowoomba, Warwick	Adelaide School of Mines	Nil	Nil
State Farms: Toowoomba, arwick, Emerald, Mary-orough, Roma, Rockhamp-on. State Nursery: Cairns. ugar Station: Mackay	Farms: Parafield, Kybybolite and Murray Bridge. Orchards: Adelaide and Roseworthy. Vineyard: Roseworthy. Experimental plots: Hammond, Eudunda, Loxton, Mt. Barker, Forest Range, Mt. Gambier, Saddleworth, and thirty-eight other centres	Narrogin, Chapman, Brunswick, Nangeenan and Hamel	Nil
Nature study and school ardens; prizes given for ractical and theoretical ork. Gardening pursued is conomic (not flower garden-g)	No systematic agricultural teaching in primary schools. Experimental elementary agriculture taken up by individual teachers—results satisfactory. Work optional but not widespread.	Experimental plots at some State schools under direction of teachers	Nil
Botany, milk and cream sting, sheep and wool aining, fruit preserving d pickling, dairying	Lectures and agricultural practical work; viticulture, fruit culture, botany; lectures in conjunction with School of Mines; ditto by horticultural instructor	Nil	Nil
Practical farming and the-etical agriculture (prefer-ce given to former), botany, ementary science and phy-cs, dairying, gardening, ele-entary chemistry, veter-ary science, horticulture, ock-breeding, bacteriology, ricultural chemistry	Training young men for practice of agriculture, horticulture, and viticulture; conducting experiments, and dairying	Nil	Nil
Experimental and acclima-ation work, stock-breeding, bridising, object lessons in ltivation, orchard work, c. Pupils taken at some of e farms	Growing of various cereals and root crops; experimental work in manuring, cultivation, and rotation of crops; irrigation, etc., of cereals; feeding of animals; selection of fruits; general attention to orchards, vineyards, and wine-making	At Narrogin farm students are admitted at annual fee of £10, and are taught practical farm work. Lectures are given at intervals by scientific staff attached to department	Nil
ne now employed	Nil. Dairy instructor visits as arranged and gives advice, etc., at some of the principal farms	Nil	Nil

* Including clerical. † Including Stock.

Main Features of Organisation.	New South Wales.	Victoria.
(vi.) Lectures given by Experts	Dairy, fruit, viticultural and other inspectors visit societies, etc., and give suitable lectures	Lectures given on principles of agriculture, care of farm animals, sheep-breeding and management, dairy farming, poultry breeding, agricultural engineering, orchard and garden work.
(vii.) Other Forms of Agricultural Instruction	"Agricultural Gazette" and pamphlets	Demonstrations in horse-breeding, dairy cattle, pig-breeding, lamb raising, and wool-classing
V. General Work of Department—		
(i.) Extent to which Distribution of Plants and Seeds is carried out by Department and General Regulations governing such Distribution	Seeds are distributed for experimental purposes, on condition that reports will be furnished to department	Seeds of cereals, potatoes, etc., are imported and distributed in suitable districts
(ii.) Number of Inspectors Employed—		
(a) Fruit and Orchard Inspectors ...	27	47
(b) Stock Inspectors	57	47
(c) Rabbit Inspectors	27	43
(d) Other Inspectors	51	4
(iii.) Acts under which the Prevention of Diseases in Stock and Plants and the Eradication of Noxious Animals, Insects, and Weeds are carried out	Pastures Protection Act 1902 " " Amended 1906 Stock Act of 1901 Stock (Tick) Act of 1901	The Vegetation Diseases Acts The Stock Diseases Acts The Vermin Destruction Act The Exported Products Act The Milk and Dairy Supervision Act
(iv.) Special Features of Entomological or other work of the Department		
(v.) Special steps taken by Department for Distribution of Information (a) Amongst the Agriculturists of the State	"Agricultural Gazette" and pamphlets	"Journal of Department of Agriculture," and the "Year Book," also publications on special subjects
(b) With a view to improving the market for the State's products	Commercial Agent for the the East has been appointed, also one for South Africa; Agent-General in London	Agent-General is supplied with samples of produce, etc., which are exhibited at his office in London. Two agents are in the East advertising products and manufactures of State. Cool storage provided by Government to assist export trade

‡ Not under Department of Agriculture.

Queensland.	South Australia.	Western Australia.	Tasmania.
Free lectures given by departmental experts on all gricultural, pastoral, and orticultural subjects. Local ocieties provide hall and at- end to advertising	Lectures and practical demonstrations given all over State under auspices of local agricultural societies; always well attended	Lectures given by dairy expert, field officer, horticulture and viticulture expert and others; demonstrations also given in cultivation of vines and fruit trees, including budding, grafting, pruning, etc.	Lectures given by experts in butter-making, modern silo, land-surveying, etc. poultry dressing, pruning, spraying and the general principles of fruit growing & agriculture
Issue of monthly "Agricultural Journal" and pamphlets n given subjects		Issue of "Agricultural Journal" monthly, and special bulletins from time to time	Nil
Small charge made to cover xpenses, except in case of eeds new to the country. eeds for state school gardens, and plants for shade urposes for public institu- ions	Special varieties of wheat distributed gratis in various parts of State; also barley and oats seed, and fodder plants of special character, likely to suit prevailing conditions	Distribution of plants and seeds, practically confined to seeds and roots of fodder plants. Recipients are asked to report results with a view to collating information as to most suitable varieties for various districts	If a new plant be discovered, it is distributed gratis
36	74	15	¶55
56	55	9	300 Police Officers
24	‡	§32	
23	‡	...	
iseases in Plants Act arsupial Act iseases in Stock Acts and Acts, 1897 to 1905 (re prickly pear) abbit Act 1885 abbit Act Amend. Act 1889 abbit Boards Act 1896 abbit Boards Act Amendment Act 1903 and 1905 General work of destruction f noxious weeds is left to cal authorities	Vine, Fruit and Vegetable Act of 1885 Stock Diseases Act of 1888 Amendment Act of 1903 Brands Act of 1879 and 1882 Brands Act Amendment Act of 1890 and 1905	Stock Act Insect Pests Act Contagious Disease in Bees Act Brands Act Noxious Weeds Act Fertiliser and Feeding Stuffs Act Rabbit Act	Codlin Moth Act Vegetat'n Diseases Act Rabbit Destruct'n Act Californian Thistle Act
Features are varied owing great range of climatic onditions. No special fea- res to be mentioned	Work confined to economic phases of entomology and vegetable pathology; aims at identifying and instructing horticulturalists how to detect different insects and fungi, and to apply best remedies for prevention; tests conducted with fungicides and insecticides, and uses demonstrated	Collection, breeding, and distribution of parasites on insect pests. Work carried out with excellent results; several pests formerly a great source of trouble and expense now practically non-existent	Lectures on the prevention of insect pests, etc.
i.) Distribution of Journal and pamphlets i.) Lectures ii.) Object lessons at farms and agricultural college	Agricultural bureau with 120 branches established; the latter meet at intervals and matters relating to agriculture, discussed (i.) "Journal of Department of Agriculture" published monthly (ii.) Special bulletins and pamphlets on agricultural and other matters published at intervals; departmental library open to those interested.	"Agricultural Journal" issued monthly. Special bulletins written by experts	"Agricultural Gazette," published every month; bulletins written by experts
.) Close inspection of exports .) Collection and distribution of information from markets where business is likely to be profitable	S.A. exhibits are forwarded to various shows in Great Britain; daily quotations of wheat in London, published in S.A. press. Produce of all kinds shipped to London and elsewhere; trial shipments of poultry and eggs to London have been successful	Supervision of shipment of produce to ensure its being placed on home markets in best possible state	Shipments of fruit to other countries

ncluding 10 rabbiters and 18 boundary riders for up-keep of State rabbit-proof fences. ¶ 5 Departmental, 50 other.

Continued from page 343.

(*a*) To pay off existing encumbrances or to purchase the land; (*b*) to pay off money owing to the Crown in respect of the land; (*c*) to make improvements or to develop the agricultural or horticultural resources of the and; (*d*) to build homes on the land.

(ii.) *Amount and Repayment of Loans.* No loan to any one person may amount to less than £50 or more than £2000, and applications for loans not exceeding £500 have priority over those of a larger amount. Advances may be made up to two-thirds of the value of the interest of the borrower in the land, buildings and improvements, except where the land is held as a conditional lease, homestead grant, settlement lease, homestead selection, settlement purchase, or conditional purchase as to which the first five years' certificate has not issued, in which cases the amount advanced may not exceed one-half of the holder's interest in the improvements. Loans are made only in respect of first mortgages, and except in the case of loans on the security of freeholds or certificated conditional purchases, are repayable by equal half-yearly instalments within such period, not exceeding thirty-one years, as the Commissioners think fit. Loans granted on the security of freeholds and certificated conditional purchases are repayable either in the same manner as loans on other securities just mentioned, or at the expiration of a fixed term not exceeding five years, during which period interest only is payable.

(iii.) *Advances on Purchases of Farms.* To facilitate close settlement on private estates suitable for the purpose, the Commissioners are authorised to make advances in order to assist persons in purchasing land. In the case of such advances the title to the land must be either freehold or a certificated conditional purchase, and the amount advanced may not exceed 80 per cent. of the Commissioners' valuation.

(iv.) *Particulars of Advances to Farmers, 1904-6.* The following table shews particulars of the advances made up to the 30th June in each year from 1904 to 1907, inclusive:—

PARTICULARS OF GOVERNMENT ADVANCES IN NEW SOUTH WALES TO FARMERS, 1904-7.

Particulars.		1904.	1905.	1906.	1907.*
Total applications received... ...	No.	9,572	10,431	11,188	†
Total amount applied for	£	1,420,001	1,581,581	1,718,431	†
Total applications refused or withdrawn...	No.	4,415	4,611	4,927	†
Total applications approved ...	No.	5,194	5,646	6,178	6,432
Total amount advanced	£	502,828	563,596	647,624	683,909
Average amount advanced per loan ...	£	97	100	105	106
Repayments of principal ...	£	110,083	157,191	236,415	281,568
Repayments of interest	£	31,620	48,043	68,646	94,798

* To 31st December, 1906. † Figures not available.

4. **Victoria.**—The Advances Department of the Government Savings Bank of Victoria was established by the Savings Bank Act of 1896, amended in 1901 and again in 1903. The funds for the purpose of making advances are raised by the issue of mortgage bonds, the total amount of which is limited to £3,000,000.

(i.) *Security on which Advances Granted.* In order to assist farmers, graziers, market gardeners, or other persons employed in agricultural, horticultural, viticultural, or pastoral pursuits, the Savings Bank Commissioners are empowered to make advances, either by instalments or otherwise, upon the security of any lands held by such person either (*a*) in fee simple, or (*b*) under a Crown lease in which the rent received is taken by the Crown in part payment of the lands demised. A loan may be either in cash or in mortgage bonds at par face value at the option of the Commissioners.

(ii.) *Amount of Advances.* The limits of the advances are £50 and £2000, as in New South Wales, applications for advances under £500 having also similar priority. In the case of land held in fee simple or under lease, the amount of the loan may not ordinarily exceed two-thirds of the actual value of the land. In the case of land which has acquired a special value by reason of being cultivated as vineyards, hop-grounds, orchards, fruit-growing plantations, and other similar purposes, advances may be made on the following terms:—(*a*) The total amount which may be at any time advanced upon any such land may not be more than £100,000 in the whole. (*b*) The amount of two-thirds of the actual value referred to above may be increased by one-quarter of any special increase in value, but such increase is in no case to be considered as greater than £30 an acre. (*c*) No advance may be for a longer period than fifteen years.

(iii.) *Purposes for which Advances Granted.* Advances are made for the following purposes only:—(*a*) To pay off existing liabilities; (*b*) to pay off money owing to the Crown in respect of the land; (*c*) to make improvements or to improve and develop the agricultural, horticultural, viticultural, or pastoral resources of the land. Advances are made on a first mortgage only.

(iv.) *Repayment of Advances.* The rate of interest charged on loans, originally fixed at 4½ per cent. per annum, may, by the Amendment Act of 1903, be altered by the Commissioners with the approval of the Governor-in-Council, up to but not beyond 5 per cent. per annum. All advances, together with interest, must be repaid by sixty-three half-yearly instalments, or such smaller number as may be agreed upon between the borrower and the Commissioners.

(v.) *Particulars of Advances to Farmers, 1904-7.* The following table gives particulars as to the loans raised and repaid by the Advances Department, the number and amount of applications received and granted, and the amounts advanced and repaid for each financial year from 1904-5 to 1906-7, inclusive:—

LOANS TO FARMERS.—TRANSACTIONS OF ADVANCES DEPARTMENT OF GOVERNMENT SAVINGS BANK, VICTORIA, DURING EACH FINANCIAL YEAR, 1904-7.

Particulars.	1904-5.	1905-6.	1906-7.	Total to the 30th June, 1907.
Loans raised ... ... £	200,000	100,000	100,000	2,183,600
„ repaid ... ... £	30,325	79,675	104,675	594,250
„ outstanding ... ... £	...	...	...	1,589,350
Applications received ... ... No.	689	788	550	10,305
„ „ ... Amount, £	323,352	319,650	217,572	4,891,187
Applications granted ... ... No.	421	431	325	6,455
„ „ ... Amount, £	175,075	169,620	116,500	[1]2,824,500
Amounts advanced... ... ... £	140,890	131,034	89,975	2,111,308
Amounts repaid ... ... £	109,226	152,626	189,547	860,257
Amounts outstanding ... ... £	...	...	...	1,251,051

1. Of this amount £2,111,308 has been actually paid over to borrowers, a further sum of £35,135 being in course of settlement; the balance represents applications withdrawn or lapsed, or amounts offered but not accepted.

The number of loans at the 30th June, 1907, was 3056, and the average balance of each loan was £409 7s. 6d. The falling off in the number of applications and amount of advances during the year 1906-7 is due, no doubt, partly to the fact that farmers have been favoured with good seasons during several years past, but partly also to the gradual fall in the rates charged for loans by other lenders. The number of repayments by farmers which became due during the year 1906-7 was 6883, representing amounts of £59,828 for interest and £28,479 for principal. These instalments have been well met, and on 30th June, 1907, there were only nine farmers in arrear, the amount of principal in arrear amounting to £46, and of interest to £65.

5. **Queensland.**—The Queensland Government was authorised, under the Agricultural Bank Act of 1901, to establish a bank for the purpose of promoting the occupation,

cultivation, and improvement of the agricultural lands of the State, and a body of three trustees was appointed to administer the Act. The Government was empowered to raise a sum not exceeding £250,000 by the issue of debentures, bearing interest at a rate of not more than 4 per cent. The original Act was amended in 1904 and again in 1905.

(i.) *Security on which and Purposes for which Advances are made.* Advances may be made to owners of agricultural lands or to occupiers of Crown lands held either as agricultural farms or homesteads, grazing farms or homesteads, unconditional selections, or miners' homestead leases, and may be for any of the following purposes:—(*a*) The payment of existing liabilities; (*b*) agricultural, dairying, horticultural, or viticultural pursuits on the holding; (*c*) making improvements or adding to improvements already made; (*d*) the purchase of stock, machinery, or implements. Advances are only made on the security of first mortgages.

(ii.) *Amount and Repayment of Loans.* No advance may exceed twelve shillings in the pound of the fair estimated value of the holding, including the value of improvements made and proposed, and in the case of advances for paying existing liabilities or for the purchase of stock, machinery, or implements, the amount may not exceed ten shillings in the pound of such value, nor may the advance at any time exceed £800. Applications for amounts not larger than £200 have priority over those for a larger amount. During the first five years following the date of the loan the borrower must pay interest at the rate of 5 per cent. per annum. After the expiration of that period the loan, together with the interest, must be repaid by half-yearly instalments within twenty years, the amount of such half-yearly instalment being £4 0s. 3d. for each £100 advanced. In the case of advances for the purposes of paying off existing liabilities or of buying stock, machinery, or implements, the loan must be repaid by equal half-yearly instalments of the amount of £3 11s. for every £100 advanced within twenty-five years from the date of its granting.

(iii.) *Transactions of Agricultural Bank, 1904-7.* The subjoined table shews particulars of the transactions of the Agricultural Bank for each year from 1904 to 1907, inclusive:—

PARTICULARS OF TRANSACTIONS OF THE AGRICULTURAL BANK, QUEENSLAND, DURING EACH FINANCIAL YEAR, 1904-7.

Particulars.	1904.	1905.	1906.	1907.
Loans raised ... £	*	*	*	*
„ repaid ... £	*	*	*	*
„ outstanding ... £	*	*	*	*
Applications received ... No.	157	699	834	503
„ „ Amount, £	21,069	108,667	120,256	69,472
Applications granted ... No.	116	296	558	313
„ „ Amount, £	12,195	35,238	69,178	36,357
Amounts advanced ... £	14,628	18,358	59,106	30,877
„ repaid ... £	650	311	3,229	12,908
„ outstanding £	20,370	38,417	94,268	112,216

* Information not available.

6. **South Australia.**—Under the State Advances Act of 1895, amended in 1896 and 1901, a State Bank has been established in South Australia for the purpose of making advances (i.) to farmers and other producers, and (ii.) in aid of industries on the security of lands held in fee simple or under Crown leases, and (iii.) to local authorities upon the security of their rates. The bank, managed by a board consisting of five trustees appointed by the Governor, has funds raised by the issue of mortgage bonds, carrying interest at a rate not exceeding 4 per cent., to an amount not greater than the total amount due to the bank for State advances, and in any case not greater than £3,000,000.

(i.) *Amount and Repayment of Loans.* No advance to farmers or to other producers, or in aid of any industry, may exceed three-fifths of the unimproved value of the fee simple of the land and permanent improvements thereon, and if the land has acquired a special additional value by reason of cultivation as a vineyard or orchard, *plus* one-third of such special additional value. If the advance be on the security of a Crown lease, the amount of the loan may not exceed one-half the selling value of the lease, including the interest of the holder in any improvements on the land. The amount lent to any one person at any time may not exceed £5000. Advances are repayable by half-yearly instalments, the rate of interest up to the limit of 5 per cent. per annum, being a matter of arrangement between the bank and the borrower.

(ii.) *Transactions of the State Bank, 1904-7.* The following table shews particulars of the transactions of the State Bank for each year from 1904 to 1907 inclusive:—

SOUTH AUSTRALIA.—PARTICULARS OF TRANSACTIONS OF THE STATE BANK FOR EACH YEAR ENDED 31ST MARCH, 1904-7.

Particulars.	1904.	1905.	1906.	1907.
Loans raised ... ... £	58,285	23,675	46,015	57,165
,, repaid ... ... £	32,195	36,560	38,465	50,515
,, outstanding ... ... £	346,030	333,145	340,695	347,345
Applications received ... ... No.	362	225	271	260
,, ,, ... Amount, £	107,159	63,340	94,794	111,609
Applications granted ... ... No.	230	126	180	146
,, ,, ... Amount, £	61,530	24,865	56,181	67,420
Amounts advanced ... ... £	55,507	24,529	51,826	58,060
,, repaid ... ... £	31,940	37,200	39,531	51,265
,, outstanding ... ... £	349,532	336,861	349,156	355,951

7. **Western Australia.**—By the Agricultural Bank Act of 1894 the Governor of Western Australia was empowered to establish a bank for the purpose of promoting the occupation, cultivation, and improvement of the agricultural lands of the colony. This Act was amended from time to time until a consolidating Act was passed in the year 1906 repealing all previous enactments on the subject. Under this last Act the bank was placed under the control of three trustees, appointed by the Governor, in whom is vested the the whole of the bank property. The necessary funds are provided for by the issue of mortgage bonds bearing interest at a rate not exceeding 4 per cent. per annum.

(i.) *Purposes for which Advances may be made.* The bank is authorised to make advances for (*a*) ringbarking, clearing, fencing, draining, or water conservation; (*b*) for discharging any existing mortgage; or (*c*) for the purchase of stock for breeding purposes.

(ii.) *Amount of Loans.* Advances may be made to an amount not exceeding £300 up to the full value of the improvements proposed to be made. Further advances may be made to an amount not exceeding £200 up to half the value of additional improvements proposed to be made. No advance, however, for the purpose of discharging existing mortgages may be made to an amount exceeding three-quarters of the value of improvements already made, and the total advances to any one person may not at any time exceed £500. Not more than £100 may be advanced to any person for the purpose of purchasing stock. Advances are made only on a first mortgage, but a second mortgage may be taken as collateral security.

(iii.) *Repayment of Loans.* During the five years following the date of the loan the borrower pays interest only, at the rate of 5 per cent. per annum. After the expiration of that period the amount advanced, with interest at 5 per cent., must be repaid within twenty-five years by equal half-yearly instalments. In the case of advances for the purpose of buying stock the bank fixes the time and manner of repayment.

(iv.) *Particulars of Transactions of Agricultural Bank, 1904-6.* Under the previous Acts, now repealed, loans up to three-fourths of the estimated value of proposed improvements were paid over by the bank in progress payments as the improvements were completed. The following table gives particulars of transactions under these Acts for each year from 1904 to 1906, inclusive. Particulars of transactions under the Act of 1906 are not yet available.

PARTICULARS OF TRANSACTIONS UNDER THE AGRICULTURAL BANK ACTS, WESTERN AUSTRALIA, 1894 TO 1905, FOR EACH YEAR FROM 1904 TO 1906, INCLUSIVE.

Year ended the 30th June.	Amounts advanced.	Clearing.	Cultivating.	Ringbarking.	Fencing.	Draining.	Wells and Reservoirs.	Buildings.	Total.
AMOUNTS ADVANCED FOR WHICH IMPROVEMENTS HAVE BEEN EFFECTED—									
	£	£	£	£	£	£	£	£	£
1904	215,000	243,870	60,454	10,787	17,265	1,675	9,861	33,168	377,080
1905	297,600	310,602	67,342	12,454	21,243	2,012	12,355	44,203	470,211
1906	394,164	398,376	86,837	17,044	30,805	2,596	15,482	57,005	608,145
LOANS APPROVED FOR WHICH IMPROVEMENTS WERE IN PROGRESS—									
	£	£	£	£	£	£	£	£	£
1904	95,650	78,018	23,314	2,488	6,079	897	7,857	11,234	129,887
1905	91,306	75,268	22,025	3,984	8,363	741	6,771	11,996	129,148
1906	117,511	110,126	33,297	7,469	15,008	695	7,969	14,313	188,877

The following table gives particulars as to the amount of loans raised and repaid, the number and amount of applications received and granted, and the amounts lent and repaid for each year from 1904 to 1907, inclusive :—

WESTERN AUSTRALIA.—PARTICULARS OF TRANSACTIONS OF AGRICULTURAL BANK FOR EACH FINANCIAL YEAR, 1905-7.

Particulars.		1905.	1906.	1907.
Loans raised	£	*	*	*
„ repaid	£	*	*	*
„ outstanding	£	*	*	*
Applications received	No.	971	1,270	1,970
„ „ ...	Amount, £	140,275	171,750	278,625
Applications granted	No.	795	1,073	1,604
„ „ ...	Amount, £	102,875	127,725	211,675
Amounts advanced	£	83,479	95,782	131,271
„ repaid	£	22,586	23,917	34,201
„ outstanding	£	251,600	323,465	420,535

* Information not available.

§ 19. Ensilage.

1. **Value to Stockowners.**—The use of ensilage as a substitute for green fodder during periods of drought or spells of dry weather, or for winter use, is less extensive in Australia than the circumstances would appear to warrant. There is, however, a growing disposition on the part of dairy farmers to make silos on their holdings, as they find that dairy cattle eat ensilage greedily, and that by its means the output of milk, both in regard to quantity and quality, may be kept up long after the supply of ordinary green food is exhausted. Sheepbreeders are also recognising the fact that during protracted periods of dry weather the silo enables them to keep their stock in good condition, and

lambing can take place satisfactorily. Ensilage thus obviates the expense of travelling or trucking sheep for hundreds of miles to get beyond the drought area, or the equally costly and even ruinous alternative of providing chaff for food at high prices and costly freight. By the judicious economising of the surplus growth of green food with the use of the silo farmers and squatters can carry more stock on their holdings than they otherwise would be justified in doing. Not only is the great waste of superabundant food thus avoided, but it becomes possible to change into a succulent and nutritious food much growth that in any other state would not be eaten by their stock. Thus such vegetation as marsh mallows, thistles, weeds of all sorts, and even the swamp reed, *Arundo phragmites*, which grows in great quantities in lagoons, billabongs, and swamps, are all eaten with avidity when offered to stock in the form of ensilage. The pit and stack silos are rapidly being superseded by those built of red gum and hardwood or concrete. This is found to a great extent to obviate the loss sustained by mould, at the same time reducing the risk of fire. These silos vary in capacity from forty to 130 tons.

2. **Government Assistance in the Production of Ensilage.**—The Government of Victoria, recognising the fact that defective methods of making ensilage have often been adopted, leading to partial or total failure, is making special efforts to educate the farming community in this respect, so that this community may avoid mistakes and better appreciate the conditions essential for the production of good ensilage. These vary with the climatic conditions and with locality. The Government is also undertaking the erection of silos on very liberal terms, repayment extending over three years. Experts supervise the erection of the silos and give practical lessons as to packing them, etc. With the exception of Victoria none of the other States have taken steps to assist the farmers financially, though some of them are making inquiries with the view of ultimately doing so where required.

3. **Quantity Made.**—Particulars concerning the number of silos and the quantity of ensilage made in the several States of the Commonwealth in the years 1901-2 to 1906-7 are furnished in the table given hereunder:—

COMMONWEALTH ENSILAGE-MAKING, 1901-2 TO 1906-7.

State.	1901-2.		1902-3.		1903-4.		1904-5.		1905-6.		1906-7.	
	Silos.	Ensilage Made.	Silos.	Ensilage Made.	Silos.	Ensilage Made.	Silos.	Ensilage Made.	Silos.	Ensilage Made.	Silos.	Ensilage Made.
	No	Tons.	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
New South Wales ...	147	7,563	79	3,212	*	21,393	*	12,609	*	9,321	*	*
Victoria †	125	5,065	111	4,703	290	10,931	300	12,779	160	7,240	210	10,581
Queensland ...	*	*	*	*	*	*	*	1,735	*	1,199	*	3,201
South Australia ...	87	2,933	98	1,582	107	2,217	120	2,765	125	3,286	*	*
Western Australia...	51	613	17	280	60	559	34	1,127	24	552	23	525
Tasmania	*	*	*	*	*	*	*	*	*	*	*	*
Commonwealth ...	...	‡16,174	...	‡9,777	...	‡35,100	...	§31,015	...	§21,598	...	...

* Figures not available. Ensilage is made in small quantities in Tasmania, though no returns have been published.

† In the case of Victoria the number of holdings is given, which will approximately represent the number of silos.

‡ Exclusive of Queensland and Tasmania.

§ Exclusive of Tasmania.

It will be noted that since the last drought greater attention has been paid to ensilage than heretofore, and though the quantity made in 1905-6 shews a falling-off this does not necessarily indicate that the quantity on hand is less, as owing to the favourable season pasturage has been very abundant, and consequently the ensilage on hand has not been availed of to as great an extent as would be the case under less propitious circumstances.

§ 20. Fertilisers.

1. **General.**—In the early days of settlement and cultivation in the Commonwealth scientific cultivation was in a much less developed state than to-day. The early farmers were neither under the necessity, nor were they as a rule aware of the need, of supplying the constituents to the soil demanded by each class of crop. The widely-divergent character of the soils in the Commonwealth, their degeneration by repeated cropping, the limitations of climatic conditions, the difficulties of following any desired order of rotation of crops, all rendered it necessary to give attention to artificial manuring. The introduction of the modern seed-drill, acting also as a fertiliser distributor, has greatly facilitated the use of artificial manures, and much land formerly regarded as useless for cultivation has now been made available. There is reason to believe that this feature will be even more strikingly characteristic of the future.

2. **Fertilisers Acts.**—In order to protect the interests of users of artificial manures an Act has been passed in each of the States, Tasmania excepted, regulating the sale and preventing the adulteration of fertilisers. The following is a list of such Acts:—

New South Wales ...	The Fertilisers Act of 1904.
Victoria	The Artificial Manures Acts of 1904 and 1905.
Queensland... ...	The Fertilisers Act of 1905.
South Australia ...	The Fertilisers Act of 1900; amended 1903.
Western Australia ...	The Fertilisers and Feeding Stuffs Act of 1904; amended 1905.

As regards their main features these several Acts are practically identical. The words "fertiliser" or "manure" mean any substance containing nitrogen, phosphoric acid, or potash, manufactured, produced, or prepared in any manner for the purpose of fertilising the soil or supplying nutriment to plants, but do not include farm-yard or stable manure or similar articles in their natural or unmanufactured state, The Acts provide that every vendor of fertilisers shall, within a stated period, forward to the Secretary of Agriculture, or corresponding officer, samples of the fertilisers on sale by him, together with the distinctive name or brands by which they are known, and the price at which he intends to sell during the year. On every bag, package, or bundle of fertiliser sold, or exposed for sale, he must attach a printed label shewing thereon:—

(i.) The number of net pounds of fertiliser in such bag or parcel;
(ii.) The figure or trade mark attached to the fertiliser and intended to identify it;
(iii.) The proportion per centum of nitrogen, phosphoric acid, and potash contained therein.

In addition to the above the vendor must furnish every purchaser with an invoice certificate, signed by himself or his agent, stating his full name and place of business and the quality of the fertiliser sold.

Any officer or analyst appointed under the Acts may enter any manufactory, warehouse, store, vessel, wharf, railway station, conveyance, or other place where fertiliser is manufactured, stored, exposed for sale, or in course of delivery or transit, and demand and take samples of such fertiliser. Every sample so taken must be divided by such officer into three parts, and each marked, sealed and fastened by him in the presence of the person in charge, and disposed of as follows:—

(i.) One part to be taken by person in charge.
(ii.) One part to be used for analysis.
(iii.) One part to be retained by the officer for future comparison.

Every buyer of fertiliser is entitled to submit a sample of such to the analyst appointed under the Act, and receive a certificate of the analysis of such. If the analysis prove it to be under what it is represented to be, the vendor must pay the cost of analysis.

3. **Imports.**—The local production of artificial manures falls short of the existing demand, and large quantities are consequently imported.

The steadily increasing demand for artificial manures appears in the following table:—

IMPORTS OF FERTILISERS, 1901 TO 1906.

Fertiliser.		1901.	1902.	1903.	1904.	1905.	1906.
Bonedust ...	Cwt.	94,680	94,387			64,241	80,625
" ...	£	22,050	18,741			15,849	20,094
Guano ...	Cwt.	262,866	449,236			534,573	818,580
" ...	£	35,151	64,801			68,088	103,953
Superphosphates	Cwt.			1,588,803	1,710,028	1,240,403	1,153,249
" "	£			246,746	287,024	192,178	170,514
Rock superphos.	Cwt.	895,904	795,091			306,592	547,079
" "	£	158,195	131,955			38,327	70,782
Other ...	Cwt.					33,736	84,979
" ...	£					10,126	24,659
Total ...	cwt.	1,253,450	1,338,714	1,588,893	1,710,028	2,179,545	2,684,512
	£	215,396	215,497	246,746	287,024	324,568	390,002

The increase of imports alone of fertilisers has been over 100 per cent. during the six years of Federation. The chief item, both as regards quantity and value, is superphosphates, a fertiliser suitable for the growing of cereals in Australian soils. The greater quantity of this manure is manufactured in the United Kingdom, whence comes nearly 70 per cent. of the total imported during 1906. Belgium, Germany and the Netherlands also contribute, and of recent years Japan has also joined in the market. Guano is imported chiefly from Ocean Island, one of the South Sea group, and in lesser quantities from Malden Island and the United States of America. Ocean Island is also the principal contributor of rock phosphates, next in order being Christmas Island and the Straits Settlements. India has practically a monopoly of the bonedust trade with the Commonwealth; only a very small amount comes from the United Kingdom and Belgium.

4. **Production.**—Statistics relating to the fertiliser manufactories of the Commonwealth, which in 1906 only numbered fourteen (exclusive of bone-mills), are not available, but the output is, as yet, very small in comparison with that which is imported.

The great increase in the wheat production of the Commonwealth during the years 1901 to 1906, viz., from thirty-eight million to sixty-six million bushels, though due mainly to favourable seasons, is also in no inconsiderable measure contributed to by better agriculture and the increasing use of superphosphates and other artificial manures. It has been urged that superphosphates tend to deprive the soil of its moisture, but long continued experiments have disposed of such a view, and have shewn on the contrary that through the decay of the larger roots which result from its use, there is a resulting increase of moisture in the soil.

5. **Statistics of Use of Fertilisers.**—The only statistics available in connection with the use of manures in the Commonwealth are those of Victoria and Western Australia. Particulars concerning the former State are given hereunder:—

FERTILISERS USED IN VICTORIA, 1901 TO 1906.

Season.	Total Area of Crops.	Farmers Using Manure.	Area Manured.		Manure Used.	
			Aggregate.	Percentage to Total Area of Crop.	Natural (Stable-yard, etc.).	Artificial.
	Acres.		Acres.		Tons.	Tons.
1901-2 ...	2,965,681	11,439	556,777	18.77	153,611	23,535
1902-3 ...	3,246,568	18,537	1,099,686	33.87	206,676	36,630
1903-4 ...	3,389,069	19,921	1,205,443	35.57	207,817	41,639
1904-5 ...	3,321,785	20,167	1,521,946	45.82	190,903	45,940
1905-6 ...	3,219,962	21,586	1,791,537	55.64	210,507	54,674
1906-7 ...	3,303,586	23,072	1,985,148	60.09	205,906	60,871

The marked increase in the percentage of the area on which manure is used to the total area under crop is apparent in the above table, and ample proof of the value of the use of fertilisers is afforded by the fact of that percentage having increased from 19 per cent. in 1901 to 60 per cent. in 1906. Corresponding particulars relative to Western Australia for the past three seasons are given in the following table, and furnish interesting evidence of the rapid extension of the use of manures in that State:—

FERTILISERS USED IN WESTERN AUSTRALIA, 1904 TO 1906.

Season.	Total Area of Crops.	Area Manured.		Manure Used.	
		Aggregate.	Percentage to Total Area of Crops.	Natural (Stable-yard, etc.).	Artificial.
	Acres.	Acres.		Loads.	Tons
1904-5	327,391	205,923	63.90	72,523	10,737
1905-6	364,704	257,469	70.60	83,033	12,673
1906-7	460,825	340,401	73.87	81,653	16,127

§ 21. Graphical Representation.

1. **Areas of Principal Crops.**—A graphical representation of the areas in the Commonwealth devoted to each of the leading crops from 1860 to the present time is furnished on page 357.

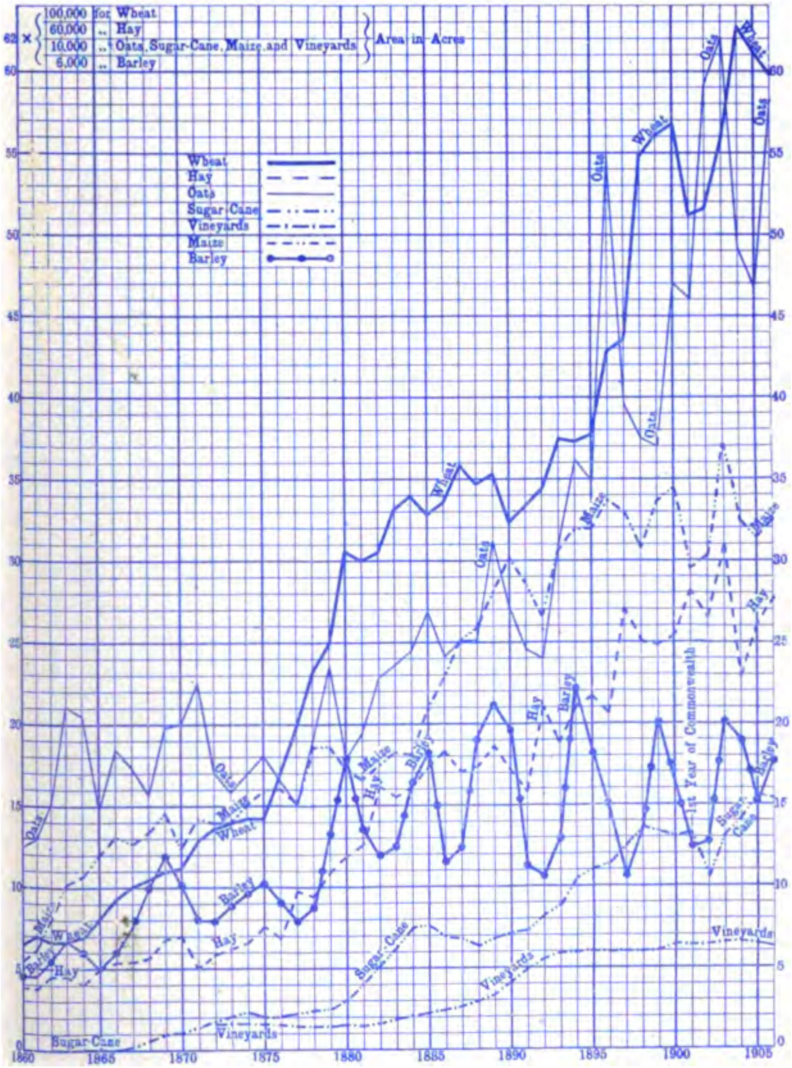
(i.) *Wheat.* In the case of wheat, the Commonwealth's principal crop, the graph indicates that the forty-six seasons under review divide themselves naturally into five distinct periods, three of moderate and fluctuating increases and two of extremely rapid increases. Thus, between the seasons 1860-1 and 1875-6, a moderate rate of increase was in evidence, the area increasing from 640,000 to 1,420,000 acres. During the five succeeding seasons a very rapid increase took place, the total in 1880-1 amounting to over 3,000,000 acres. For fifteen years thereafter the increase in area was not large, and in two seasons, viz., 1885-6 and 1890-1, marked decreases were experienced. The total increase for the fifteen years was about 700,000 acres, the total for 1895-6 being rather more than 3,750,000 acres. The succeeding five years witnessed a rapid increase in area to a total of more than 5,600,000 acres, followed by a further period of marked fluctuations; this latter period, however, contained the season of maximum wheat-cropping, viz., 1904-5, when an area of 6,270,000 acres was so devoted.

(ii.) *Hay.* Hay-growing, which, next to the growing of wheat for grain, is the most important branch of agriculture in the Commonwealth, will be seen from the graph to have fluctuated very considerably from year to year during the period under review, these fluctuations being due in the main to seasonal variations and to variations in the relative prices of grain and hay crops. It will be seen that the features of the graphs are a moderate increase from 1860-1 to 1875-6, a fairly rapid increase from 1875-6 to 1882-3, moderate increase thence to 1896-7, succeeded by marked fluctuations from this point onwards with, on the whole, a moderate rate of increase. The maximum area under hay was reached in the season 1903-4, when a total of 1,850,000 acres was attained.

(iii.) *Oats.* The graph relating to oats exhibits extremely marked fluctuations from year to year in the area devoted to this crop, the general tendency, however, being towards increase. This feature was specially marked from 1892-3 to 1896-7, while the succeeding years were characterised by very extensive fluctuations. The maximum area under oats was reached in the season 1903-4, with a total of more than 620,000 acres.

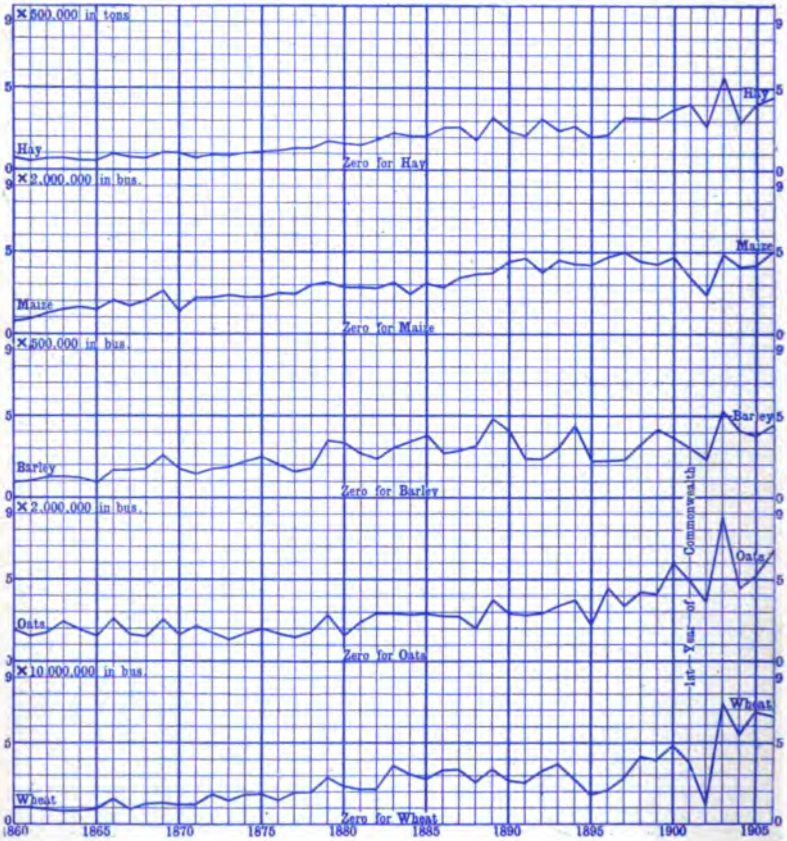
(iv.) *Maize.* The graph relating to maize indicates that the area devoted thereto in Australia, although somewhat fluctuating, increased with fair rapidity until the season

GRAPHS SHEWING THE AREA UNDER THE PRINCIPAL CROPS IN THE COMMONWEALTH FROM 1860-1 TO 1906-7.



Explanation of Graphs.—The base of each small square represents an interval of one year, while the vertical height represents a number of acres, varying with the nature of the crop in accordance with the scale given in the upper left-hand corner of the diagram. The height of each graph above the base line denotes, for the crop to which it relates, the total area grown in the Commonwealth during the successive seasons.

GRAPHS SHEWING THE PRODUCTION OF THE PRINCIPAL CROPS IN THE COMMONWEALTH FROM 1860-1 TO 1906-7.



Explanation of Graphs.—In this diagram a separate base line is provided for each of the crops dealt with. In each instance the base of a small square represents an interval of one year, the vertical height of such square representing in the case of the wheat graph, 10,000,000 bushels; oats, 2,000,000 bushels; barley, 500,000 bushels; maize, 2,000,000 bushels; and hay, 500,000 tons. The height of each graph above its base line denotes the aggregate yield in the Commonwealth of that particular crop during the successive seasons.

1896-7, since when it has varied above and below the point then reached, on the whole remaining practically stationary. The area for the season 1906-7 was, in fact, somewhat less than that for 1896-7. The maximum area under maize, viz., 372,000 acres, was attained in the season 1903-4.

(v.) *Sugar-Cane.* In the case of sugar-cane the graph shews a fairly rapid rate of increase to 1874-5, followed by a period of five years during which the area increased but slowly. From 1879-80, however, the sugar-cane area rose rapidly until in 1884-5 a total of more than 75,000 acres was reached. Then followed a period of diminished cultivation, and it was not until 1892-3 that so high a total was again attained. After this the area rose rapidly to 136,000 acres in 1898-9, but during the next five years a decline took place, the area for 1903-4 being 132,000 acres. A marked decline was in evidence in 1902-3, and a corresponding recovery in 1903-4. The season of maximum area, viz., 156,000 acres, was 1905-6.

(vi.) *Barley.* The Commonwealth barley crop, although not an extensive one, is yet one which has exhibited from time to time very marked fluctuations in area. The graph representing this crop is consequently a very irregular line. The total has, on the whole, increased but slightly since 1880, rapid increases in certain years being succeeded by equally rapid decreases in subsequent years. The maximum area under barley, viz., 133,000 acres, was attained in the season 1894-5.

(vii.) *Vines.* The graph relating to area under vines, from 1872-3 onwards, indicates that there were two periods of very slow increase, one from 1872-3 to 1881-2, the other from 1893-4 onwards. Between these, viz., from 1881-2 to 1893-4, a moderate rate of increase of area was experienced, the total for the Commonwealth advancing during that time from 14,600 acres to 57,400. The season of maximum area under vineyards was 1904-5, with a total of about 65,700 acres.

2. **Production.**—The diagram on page 358 furnishes a graphical representation of the aggregate yields from 1860-1 to 1906-7 of five of the principal crops of the Commonwealth.

(i.) *Wheat.* This graph brings out clearly the fact that while on the whole the production of wheat in the Commonwealth is increasing with fair rapidity, the fluctuations in the total quantity produced are more marked in recent than in earlier years. Thus since the year 1890 there have been three seasons of extremely low output, viz., in 1891-2, 1895-6, and 1902-3, with aggregate yields respectively of 25,700,000 bushels, 18,300,000 bushels, and 12,400,000 bushels. On the other hand there have been three seasons in which the total production was exceptionally high. These will be seen from the graph to have been the seasons 1893-4, 1900-1, and 1903-4, the total yields for which were 37,100,000 bushels, 48,400,000 bushels, and 74,100,000 bushels respectively. Each of these yields represented at the date of its attainment the maximum Australian wheat crop, the last mentioned being the highest yet reached.

(ii.) *Oats.* From 1860-1 to 1880-1 the oat crop of the Commonwealth, although exhibiting from year to year fluctuations more or less marked, gave no indication of a tendency to increase with the advance in population. This is well shewn in the diagram, by the persistence with which the oats graph for this period adheres to the line denoting 4,000,000 bushels, the yield for 1880-1 being actually lower than that for 1860-1. From this latter season to 1894-5 the variation was on a somewhat higher level, and is shewn in the diagram to have been in the vicinity of the line representing 6,000,000 bushels. From this point onwards a tendency to more rapid increase in production is in evidence, obscured somewhat by extensive fluctuations corresponding to those referred to above in the case of wheat. Thus in 1895-6 and 1902-3 the total yields were only 4,400,000 and 7,300,000 bushels respectively, while in 1900-1 and 1903-4 aggregates respectively of 12,000,000 and 17,500,000 bushels were reached, this latter being the maximum oat crop of the Commonwealth.

(iii.) *Barley*. The Australian barley crop will from the graph be seen to have fluctuated very considerably throughout, these variations being due rather to fluctuations in the area sown than to adverse seasons. From 1879-80 to 1902-3 the curve rises above and falls below the line representing 1,500,000 bushels. For more recent years the graph bears evidence of an increasing, though still fluctuating, output. The maximum barley crop of the Commonwealth was that of 2,660,000 bushels in 1903-4.

(iv.) *Maize*. The maize graph indicates a rapid increase in output from 1860-1 to 1869-70, followed by a moderate increase from the latter season to 1886-7, and a further rapid increase to 1891-2. From the last mentioned season onwards the production has fluctuated considerably, but little increase has, on the whole, been experienced, the total for 1891-2 being 9,300,000 bushels as compared with 10,200,000 bushels for 1906-7, the maximum Australian maize crop. As in the case of all other crops, the maize yield for 1903-4 was much higher than those for the years immediately preceding and succeeding.

(v.) *Hay*. The graph relating to the Commonwealth output of hay indicates a fairly continuous increase in production from the season 1860-1, when the total stood at 340,000 tons, to that of 1887-8 when it reached 1,330,000 tons. In subsequent years marked fluctuations have been in evidence, but the tendency has, on the whole, been one of increase. The maximum hay crop of the Commonwealth was that of the season 1903-4, when the total production reached 2,900,000 tons. The yield for 1906-7, viz., 2,260,000 tons, was higher than for any season except 1903-4.

SECTION IX.

FARMYARD AND DAIRY PRODUCTION.

§ 1. Introductory.

1. **General.**—The live stock which accompanied Captain Phillip in 1788 included one bull, four cows, one calf and seven pigs, these being established at Farm Cove when Port Jackson was settled. The greater part of the early shipments of cattle were slaughtered to relieve the necessity of early colonists in the famines, which several times threatened the existence of the young community. The existing herds have sprung not only from the original stud, but have been steadily improved by the introduction of stud cattle and pigs, continually increasing attention being paid thereto, especially perhaps of late years. Stock-raising with regard to the special requirements of dairying, etc., has in fact been properly considered only in recent times. The technical advances made in the manufacture of butter, cheese, etc., in Europe, and the necessity of having regard thereto in connection with the export trade of Australia, demanded in Australian stock-raising a judicious crossing of strains with a view to increasing the essential contents in the milk for the production of butter or cheese ; the eradication of grasses of little or no use, and the planting in lieu thereof of leguminosæ, grasses and other plants, so as to amplify the nutrient qualities of the natural herbage, which, however, it may be said, is very often excellent. The importation of British and other cattle for breeding purposes is ordinarily under private enterprise. Government supervision has at times been found necessary in order to prevent the introduction of diseases and pests, with the result that there is but little disease among Australian herds. Recently some of the States Governments have made considerable importations for stud purposes. Permanent structures for the shelter of dairy herds, etc., as a rule are not required anywhere in the Commonwealth. State nurseries, however, supply to settlers, gratis, trees for making shelter belts, and these are found to be sufficient. Owing to the mildness of the Australian climate the heavy expenses for housing, stall-feeding, etc., are unnecessary. Where winter fodder must be grown it is given to the cattle in the fields, and consists mostly of lucerne, oats, maize, barley, and rye. Ensilage is highly recommended by dairy experts, and, when necessary, increasing use is made thereof. Continued expansion of the dairying industry, and particularly its extension into non-coastal districts, will involve a more general use of the silo.

Australian grasses are particularly suitable for dairy cattle, since they possess milk-producing, as well as fattening, properties. The area of land devoted to green food and permanent artificially-sown grasses is constantly increasing, its produce being, for the most part, devoted to the depasturing of dairy herds. The opinion, long held, that only heavily-grassed country with good rainfall, was profitable for dairying has been controverted by experience, it being shewn that more lightly clad regions yield good milk results.

2. **State Supervision of Industry.**—Each of the State agricultural departments exercises considerable supervision in regard to the industry. Dairy experts are employed to give instruction in approved methods of production, to examine animals, to inspect the buildings used for milking and separating, and to examine the marketable produce. A high standard of dairy hygiene, cleanliness of *personnel* and *materiel*, and purity of the article and freedom from adulteration have also been insisted upon under State laws.

3. **Mixed Farming and Value of Dairy Production.**—Dairying is not now, as formerly, wholly confined to farmers, since many graziers in a large way of business have

lately given it their attention. In non-coastal regions it is generally carried on in conjunction with agriculture and sheep-raising, sufficient fodder being grown to carry the cattle through the winter months. Local wants are thus met, and in many places removed from the metropolis well-equipped factories have been established.

The mode of estimating the value of dairy production presents certain features which demand special attention. "Market values" and so-called "farm values" have been used. The question of value will be considered in a later section of the Year Book.

4. **Factory System.**—Cream separation and butter-making are often carried on together under the co-operative system. The creation of large central butter factories, supplied by numerous separating establishments or "creameries," has resulted in a considerable reduction in cost of manufacture, since improved appliances, such as refrigerators, may be profitably worked at the larger establishments. The product is also of a more uniform quality. The number of farmers who adhere to hand processes is steadily diminishing. Formerly the average quantity of milk used per pound of hand-made butter was about 3 gallons, but separator butter requires only about 2.6 gallons.

5. **Butter and Cheese Factories.**—The establishments in the Commonwealth, where the manufacture of butter, butterine, margarine, and cheese was carried on, numbered 550 in 1906. These were distributed as regards the various States as follows:—New South Wales, 178; Victoria, 222; Queensland, 70; South Australia, 55; Western Australia, 5; Tasmania, 20.

§ 2. Milk, Butter and Cheese.

1. **Dairy Herds.**—Since the drought year 1902, there has been in each State, almost without exception, a yearly increase in the number of dairy cows. In New South Wales, Victoria, South Australia proper, and Tasmania—as will be seen from the table of cattle and dairy cattle given below—the proportion of dairy cattle to all cattle is high. In Queensland, the Northern Territory of South Australia, and Western Australia, there is a greatly preponderating number of other cattle, dairying not having been established in the tropical regions of the Continent:—

CATTLE AND DAIRY CATTLE, AUSTRALIAN COMMONWEALTH, 1901-6.

State.		1901.	1902.	1903.	1904.	1905.	1906.
New South Wales* ...	All Cattle	2,047,454	1,741,226	1,880,578	2,149,129	2,337,973	2,549,944
	Dairy Cows	417,835	351,287	523,438	591,936	644,164	713,049
Victoria	All Cattle	1,625,532 †	1,648,680 †	1,671,828 †	1,694,976	1,737,690	1,804,323
	Dairy Cows	483,650	510,546	515,179	632,493	649,100	701,309
Queensland ...	All Cattle	3,772,707	2,543,471	2,481,717	2,722,340	2,963,695	3,413,919
	Dairy Cows	136,000 ‡	108,800 ‡	119,000 ‡	144,000 ‡	172,000 ‡	215,000 ‡
South Australia ...	All Cattle	225,256	213,343	244,610	272,459	300,721	325,794
	Dairy Cows	74,995	75,011	83,348	88,156	93,069	97,843
Northern Territory	All Cattle	255,521	305,820	291,970	247,920	346,910	354,371
	Dairy Cows	804	627	902	670	756	680
Western Australia ...	All Cattle	398,547	437,136	497,617	561,490	631,825	690,011
	Dairy Cows	34,111	24,324	27,232	27,724	35,011	34,822
Tasmania	All Cattle	168,661	177,566	185,938	201,206	206,211	211,117
	Dairy Cows	40,933	33,316	45,018	50,230	49,618	49,132
Commonwealth*	All Cattle	8,493,678	7,067,242	7,254,258	7,849,520	8,525,025	9,343,409
	Dairy Cows	1,188,418	1,103,911	1,314,117	1,535,209	1,643,718	1,811,835

† Statistics not collected: figures supplied by interpolation.
‡ Statistics not collected: figures estimated.
* In New South Wales, up to 1902 the figures include only the cows actually in milk at the time the returns were taken. The figures for subsequent years are made up as follows:—

Year.	Milch Cows.	Cows at Present Dry.	Heifers within 3 M'ths of Calving.	Total Dairy Cows.
1903	362,429	117,679	43,330	523,438
1904	424,936	131,595	35,405	591,936
1905	442,950	154,655	46,559	644,164
1906	494,820	172,888	45,341	713,049

2. **Milk.**—The annual quantity of milk produced per dairy cow varies greatly with locality and season, probably reaching as high as 500 gallons, but averaging for the whole of Australia, for all dairy cows and for all seasons, only about 250 gallons per annum. The best yields appear to be in New South Wales, Victoria, and Tasmania, while Western Australia is something below Queensland and South Australia. Tables giving estimated yields in New South Wales and Victoria are appended, but it is to be noted that the figures are subject to considerable uncertainty.

NEW SOUTH WALES.—YIELD OF MILK, 1901 TO 1905.

—	1901.	1902.	1903.	1904.	1905.
Dairy cows in milk	417,835	351,287	362,429	424,936	442,950
Production of milk ... ... gallons	122,750,500	105,742,900	129,966,100	158,650,800	162,918,600
Average yield per cow ... ... gallons	294	301	359	373	368

Mean of last line, 339.

VICTORIA.—YIELD OF MILK, 1901 TO 1905.

—	1901.	1902.	1903.	1904.	1905.
Cows whose milk was recorded... ...	98,695	118,065	95,158	90,046	75,727
Milk return from cows whose record was kept ... ... gallons	31,807,351	32,343,292	31,995,901	31,932,259	24,838,030
Average per cow ... ... gallons	322	274	336	329	328

Mean, 318.

3. **Butter and Cheese.**—The butter output shews, on the whole, a tolerably steady increase in all the States excepting Tasmania, since 1902, the most marked development being in Queensland. Though the increases were not so great as was the case with butter, the production of cheese also reached its highest figure in 1906. For the six years from 1901 to 1906 the figures are:—

PRODUCTION OF BUTTER AND CHEESE, AUSTRALIAN COMMONWEALTH, 1901 TO 1906.

Year.	New South Wales.	Victoria.	Queensland.	South Australia.	W. Aust.	Tasmania.*	Total for C'wealth.†
BUTTER.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
1901	39,056,878	46,857,572	9,741,882	4,954,523	336,440	723,771	101,671,066
1902	29,950,977	39,227,754	4,851,362	4,521,246	321,462	699,526	79,572,327
1903	38,727,107	46,685,727	7,717,325	5,995,756	351,885	854,442	100,332,242
1904	53,591,243	61,002,841	17,538,473	6,836,170	441,103	845,378	140,255,208
1905	53,040,250	57,606,821	20,319,976	8,226,805	423,270	1,281,604	140,898,726
1906	58,877,182	68,088,168	22,746,593	8,873,632	380,157	904,930	159,870,662
CHEESE.							
1901	3,838,835	3,974,668	2,436,912	1,053,160	3,578	268,539	11,575,692
1902	4,148,038	3,849,561	952,013	705,969	1,592	348,614	10,005,787
1903	4,748,176	5,681,515	1,479,651	972,584	8,039	533,709	13,423,674
1904	4,223,621	4,747,851	2,607,475	851,800	350	204,160	12,635,257
1905	4,625,980	4,297,350	2,682,089	1,174,867	4,831	369,913	13,155,030
1906	5,389,345	4,877,593	2,921,140	1,398,785	1,314	190,481	14,778,658

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* Tasmanian statistics of the production of butter and cheese relate only to the quantities made in factories.

† The totals for the Commonwealth here given are exclusive of Tasmanian butter and cheese made elsewhere than in factories.

4. **Concentrated Milk.**—"Condensed" or "concentrated" milk denotes milk the bulk of which is reduced by evaporation, no sweetening agent being added. When a sweetening agent is added it is called "preserved" milk. Small quantities of such milk have been made, but the industry is at present by no means a large one. In New South Wales and Victoria the following quantities are returned under the respective heads "Condensed or Concentrated Milk made" and "Concentrated Milk made":—

NEW SOUTH WALES AND VICTORIA.—CONDENSED OR CONCENTRATED MILK MADE, 1901 TO 1906.

State.		Year.					
		1901.	1902.	1903.	1904.	1905.	1906.
N. S. Wales ...	lbs.	533,500	485,545	1,004,512	1,171,872	1,169,977	1,033,446
Victoria ...	gallons	266,083	243,904	236,581	226,810	232,310	309,138

5. **Oversea Trade in Milk, Butter, and Cheese.**—The tables following give the import, export, or net export or import of butter, cheese, and milk. In each of the six years exports of butter exceeded imports; in only one did this occur with regard to cheese, and in none with regard to milk.

IMPORTS, EXPORTS, AND NET IMPORTS OF BUTTER, CHEESE AND MILK AUSTRALIAN COMMONWEALTH, 1901 TO 1906.

IMPORTS.

Products.		1901.	1902.	1903.	1904.	1905.	1906.
Butter	lbs.	1,342,338	6,901,779	1,887,148	43,873	592,201	70,143
"	£	61,581	357,244	88,754	1,636	25,509	3,133
Cheese	lbs.	2,777,464	2,318,110	1,141,300	375,642	384,718	304,951
"	£	66,006	59,674	33,071	12,349	12,494	11,533
Milk—concentrated and preserved[1] ...	lbs.	10,778,775	13,331,341	13,664,776	11,196,926	10,943,788	10,672,265
" " "	£	190,836	241,199	238,632	197,254	196,471	189,316

EXPORTS.

Products.		1901.	1902.	1903.	1904.	1905.	1906.
Butter	lbs.	34,607,397	9,661,925	32,124,709	64,807,962	56,477,536	75,802,856
"	£	1,451,168	472,772	1,267,411	2,461,450	2,354,399	3,240,063
Cheese	lbs.	293,381	253,615	243,176	514,576	193,608	252,115
"	£	7,982	7,623	7,077	11,216	5,291	6,832
Milk—concentrated and preserved[1] ...	lbs.	1,059,169	876,909	709,549	659,937	495,089	311,540
" " "	£	17,582	15,360	14,183	11,857	9,319	6,375

NET EXPORTS.[2]

Products.		1901.	1902.	1903.	1904.	1905.	1906.
Butter	lbs.	33,265,059	2,760,146	30,237,561	64,764,089	55,885,335	75,732,713
"	£	1,389,587	115,528	1,178,657	2,459,814	2,328,890	3,236,930
Cheese	lbs.	—2,484,083	— 2,064,495	— 898,124	138,934	— 191,110	— 52,836
"	£	— 58,024	— 52,051	— 25,904	— 1,133	— 7,203	— 4,701
Milk—concentrated and preserved[1] ...	lbs.	—9,719,606	—12,454,432	—12,955,227	—10,536.989	—10,448,699	—10,360,725
" " "	£	— 173,254	— 225,839	— 224,449	— 185,397	— 187,152	— 182,941

[1] See definition on page 363. [2] — Signifies net imports.

The large quantities of milk imported for local use indicate room for development in the preserving industry.

6. **Interstate Trade in Milk, Butter and Cheese.**—The extent of interstate trade in dairy products, naturally of considerable magnitude, is worthy of statistical presentation. That for butter, cheese and milk is as follows:—

INTERSTATE TRADE IN BUTTER AND CHEESE, 1906.

State.	Imports from other States of the C'wealth.		Exports to other States of the Commonwealth.		Net Interstate Exports.[1]	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
			BUTTER.			
	lbs.	£	lbs.	£	lbs.	£
New South Wales ...	2,930,232	121,308	1,159,709	48,676	—1,770,523	— 72,632
Victoria	1,055,071	43,373	9,209,810	434,323	8,154,739	390,950
Queensland	45,161	1,330	1,822,431	73,929	1,777,270	72,599
South Australia ...	1,060,974	48,756	1,386,559	58,980	325,585	10,224
Western Australia ...	7,190,501	340,368	2,239	111	—7,188,262	—340,257
Tasmania	1,730,689	79,055	431,880	18,171	—1,298,809	— 60,884
			CHEESE.			
	lbs.	£	lbs.	£	lbs.	£
New South Wales ...	359,396	8,856	446,479	11,257	87,083	2,401
Victoria	345,741	8,153	1,150,594	28,093	804,853	19,940
Queensland	116,210	2,988	372,410	8,957	256,200	5,969
South Australia ...	149,205	3,627	155,791	3,786	6,586	159
Western Australia ...	1,140,121	27,835	335	25	—1,139,786	— 27,810
Tasmania	141,258	3,667	126,322	3,008	— 14,936	— 659

1.— Signifies net imports.

It will be observed from the column of net exports that Victoria occupies the leading position as supplier, and Western Australia the chief position as interstate importer of these products.

INTERSTATE TRADE IN MILK AND CREAM, 1906.

State.	Imports from other States of the Commonwealth.		Exports to other States of the Commonwealth.		Net Interstate Exports.[1]	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
			MILK AND CREAM—FRESH.			
	Gallons.	£	Gallons.	£	Gallons.	£
New South Wales ...	24,268	404	58,998	9,883	34,730	9,479
Victoria	58,998	9,883	20,955	349	— 38,043	— 9,534
Queensland	...	...	...	...	...	...
South Australia ...	...	...	3,313	55	3,313	55
Western Australia ...	...	...	...	...	...	...
Tasmania	...	...	...	...	...	...
			MILK AND CREAM—CONCENTRATED.[2]			
	lbs.	£	lbs.	£	lbs.	£
New South Wales ...	14,676	341	72,806	1,355	58,130	1,014
Victoria	25,912	478	530,362	8,453	504,450	7,975
Queensland	2,916	92	...	...	— 2,916	— 92
South Australia ...	...	...	...	...	...	...
Western Australia ...	430,631	6,786	600	9	— 430,031	— 6,777
Tasmania	131,061	2,143	1,428	23	— 129,633	— 2,120
			MILK AND CREAM—PRESERVED.[2]			
	lbs.	£	lbs.	£	lbs.	£
New South Wales ...	1,208,299	24,178	193,035	3,780	— 1,015,264	— 20,398
Victoria	76,700	1,560	1,279,138	25,084	1,202,438	23,524
Queensland	126,322	2,577	600,382	11,556	474,060	8,979
South Australia ...	370,396	7,880	567,253	11,398	196,857	3,518
Western Australia ...	734,282	13,240	14,861	325	— 719,421	— 12,915
Tasmania	146,422	2,880	7,752	172	— 138,670	— 2,708

1.— Signifies net imports. 2. See definition on page 363.

The remarks relating to the positions of Victoria and Western Australia in the case of butter and cheese apply also to concentrated and preserved milk and cream. New South Wales is a large importer of preserved milk from other States of the Commonwealth.

7. **Local Consumption of Butter and Cheese.**—The total production of butter and cheese, with the net export or import subtracted or added, gives approximately the consumption in the Commonwealth. In the period considered 1904 was the only year in which the local supply of cheese was adequate:—

BUTTER AND CHEESE LOCALLY CONSUMED, 1901 TO 1906.

Product.	1901.	1902.	1903.	1904.	1905.	1906.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
Butter ...	68,406,007	76,812,181	70,094,681	75,491,119	85,013,391	84,137,949
Cheese ...	14,059,775	12,070,282	14,321,798	12,496,323	13,346,140	14,831,494

The consumption in 1906 was, therefore, equal to 20.6 lbs. of butter and 3.6 lbs. of cheese per head of mean population, an amount probably unsurpassed anywhere. The consumption of butter and cheese in the United Kingdom is given as 19 lbs. per head, and is therefore only equal to about four-fifths of that of the Commonwealth.

§ 3. Pigs, Bacon, etc.

1. **Pigs.**—The pigs in Australasia numbered 43 in 1792; 4017 in 1800; 8992 in 1810; 33,906 in 1821; 66,086 in 1842; and 121,035 in 1851. The figures for the States in subsequent census years, and in the last five years, were:—

NUMBER OF PIGS, AUSTRALIAN COMMONWEALTH, 1861 TO 1906.

State.	1861.	1871.	1881.	1891.	1901.	1902.	1903.	1904.	1905.	1906.
New South Wales ...	146,091	213,193	213,916	253,189	265,730	193,097	221,592	330,666	310,702	243,370
Victoria	43,480	177,447	239,926	286,780	334,295*	318,220*	302,145*	286,070	273,682	220,452
Queensland ...	7,465	32,707	56,438	122,672	121,641	77,202	117,553	185,141	164,087	138,282
South Australia ...	69,286	95,542	120,718	83,797	89,875	83,791	89,331	112,584	119,005	112,277
Western Australia ...	11,984	14,265	22,530	25,930	61,052	52,883	50,209	70,299	74,567	56,203
Tasmania	40,841	52,863	49,660	73,520	58,716	52,096	56,538	77,943	72,810	42,985
Commonwealth ...	319,147	586,017	703,188	845,888	931,309	777,289	837,368	1,062,703	1,014,853	813,569

* Statistics not collected. Figures supplied by interpolation.

The number of pigs was highest in 1904, when for the first time it was over a million; prior to 1899, it had never reached 900,000. That year, the two immediately following, and 1904 and 1905, mark the highest totals. An examination of the States' returns shews remarkable fluctuations. It will be noticed that in no State was the number as high in 1906 as in the preceding year.

2. **Bacon and Ham.**—Though the Tasmanian production of bacon and ham shews a falling-off, the output for the Commonwealth has increased in the last three years. In the three principal dairying States, particularly in Queensland, the returns indicate very satisfactory progress.

PRODUCTION OF BACON AND HAM, AUSTRALIAN COMMONWEALTH, 1901 TO 1906.

Year.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.*	Total for Commonwealth.†
	lbs.	lbs.	lbs.		lbs.	lbs.	lbs.
1901 ...	11,080,891	15,011,616	7,064,714	‡	333,393	530,015	34,020,629
1902 ...	8,995,856	14,438,370	6.512,952	‡	246,827	414,340	30,608,345
1903 ...	7,864,771	12,504,851	4,145,900	‡	178,557	401,417	25,095,496
1904 ...	10,680,532	14,851,944	6,514,852	‡	250,264	574,781	32,872,373
1905 ...	11,652,440	16,483,665	10,500,335	‡	401,447	446,714	39,434,601
1906 ...	11,843,595	18,051,166	10,846,959	‡	272,494	151,700	41,165,914

* Tasmanian statistics of the production of bacon and ham relate only to quantities made in factories.

† The totals for the Commonwealth here given are exclusive of Tasmanian bacon and ham made elsewhere than in factories, and also of all South Australian bacon and ham.

‡ Information not available.

3. **Oversea Trade in Pig Products.**—The oversea trade in pigs and pig products is shewn in the following tables:—

IMPORTS, EXPORTS, AND NET EXPORTS OF BACON AND HAM, FROZEN PORK, PIGS, AND LARD, AUSTRALIAN COMMONWEALTH, 1901 TO 1906.

	1901.	1902.	1903.	1904.	1905.	1906.
			BACON AND HAM.			
Imports ... lbs.	905,164	730,699	626,791	371,354	162,715	194,059
,, ... £	29,516	27,738	24,152	13,425	5,807	7,171
Exports ... lbs.	286,699	204,266	231,570	382,580	492,076	532,851
,, ... £	10,424	8,106	9,756	12,596	15,262	18,467
Net Exports[1] lbs..	— 618,465	— 526,433	— 395,221	11,226	329,361	338,792
,, ... £	— 19,092	— 19,632	— 14,396	— 829	9,455	11,296
			FROZEN PORK.			
Imports ... lbs.	106	211,678	2,467,782	211,803	154,052	139,363
,, ... £	2	6,840	65,136	4,287	4,039	3,717
Exports ... lbs.	303,899	647,920	277,310	521,331	2,824,016	3,472,224
,, ... £	5,971	14,654	7,174	9,846	47,596	60,936
Net Exports[1] lbs.	303,793	436,242	-2,190,472	309,528	2,669,964	3,332,861
,, ... £	5,969	7,814	— 57,962	5,059	43,557	57,219
			PIGS.			
Imports ... No.	39	50	21	73	64	24
,, ... £	765	513	121	832	814	1,269
Exports ... No.	164	31	77	247	322	220
,, ... £	234	119	106	276	399	263
Net Exports[1] No.	125	— 19	56	174	258	196
,, ... £	— 531	— 394	— 15	— 556	— 415	— 1,006
			LARD.			
Imports ... lbs.	79,956	461,046	698,793	89,652	45,702	64,561
,, ... £	1,716	12,459	17,703	1,736	924	1,294
Exports ... lbs.	93,929	64,430	426,507	952,088	1,064,562	551,268
,, ... £	1,791	1,361	7,770	15,311	16,163	8,373
Net Exports[1] lbs.	13,973	— 396,616	— 272,286	862,436	1,018,860	486,707
,, ... £	75	— 11,098	— 9,933	13,575	15,239	7,079

[1] — Signifies net imports.

4. **Interstate Trade in Pig Products.**—The interstate trade in pigs, bacon and hams, frozen pork, lard, etc., in 1906 was as follows:—

INTERSTATE TRADE IN PIG PRODUCTS, 1906.

State.	Imports from other States of the C'wealth.		Exports to other States of the Commonwealth.		Net Interstate Exports.[1]	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
			PIGS.			
	No.	£	No.	£	No.	£
New South Wales ...	1,250	1,620	4,469	5,308	3,219	3,688
Victoria	4,453	5,215	216	570	— 4,237	— 4,645
Queensland ...	11	62	1	2	— 10	— 60
South Australia ...	7	47	1,152	1,458	1,145	1,411
Western Australia ...	115	395	...	...	— 115	— 395
Tasmania	3	2	1	3	— 2	1
			BACON AND HAMS.			
	lbs.	£	lbs.	£	lbs.	£
New South Wales ...	2,821,452	91,665	492,883	13,137	— 2,328,569	— 78,528
Victoria	205,431	5,414	4,358,223	138,986	4,152,792	133,572
Queensland ...	160,832	4,644	2,480,225	79,838	2,319,393	75,194
South Australia ...	58,577	2,005	467,457	14,120	408,880	12,115
Western Australia ...	3,800,966	122,253	1,734	65	— 3,799,232	— 122,188
Tasmania	773,673	20,736	20,409	571	— 753,264	— 20,165
			FROZEN PORK.			
	lbs.	£	lbs.	£	lbs.	£
New South Wales ...	76,488	1,236	183,432	3,499	106,944	2,263
Victoria	1,648	21	114,544	1,934	112,896	1,913
Queensland ...	115,327	2,282	68,709	1,406	— 46,618	— 876
South Australia ...	...	...	...	...	...	...
Western Australia ...	173,222	3,300	...	...	— 173,222	— 3,300
Tasmania	...	...	...	...	...	...
			LARD AND REFINED ANIMAL FATS.			
	lbs.	£	lbs.	£	lbs.	£
New South Wales ...	501,164	9,512	172,911	3,186	— 328,253	— 6,326
Victoria	275,482	4,265	423,002	7,874	147,520	3,609
Queensland ...	46,775	797	636,706	11,846	589,931	11,049
South Australia ...	66,924	1,365	399,808	6,572	332,884	5,207
Western Australia ...	548,428	9,930	100	18	— 548,328	— 9,912
Tasmania	194,562	3,642	808	15	— 193,754	— 3,627

[1] — Signifies net imports.

5. **Local Consumption of Bacon and Ham.**—From 1904 to 1906 the production of bacon and ham was sufficient to meet the local demand, and there was a surplus for export, but in 1901, 1902, and 1903 this was otherwise, and considerable quantities were imported.

BACON AND HAM LOCALLY CONSUMED, 1901 TO 1906.

Year.	1901.	1902.	1903.	1904.	1905.	1906.
Consumption[1] ... lbs.	34,639,094	31,134,778	25,490,717	32,861,147	39,105,240	40,827,122

[1] This excludes South Australia, for which no figures of production were available.

§ 4. Poultry Farming.

1. **Development of the Industry.**—Until recently, poultry farming as a well organised industry could scarcely be said to exist, although in metropolitan and suburban districts poultry has of course long been kept for the table and egg supplies. The aggregate output, though considerable, represented relatively little value beyond the cost of production, owing to imperfect management. Many farmers also, both wheat-growers and dairymen, have maintained a large poultry stock, erecting poultry yards constructed on modern principles, and feeding from the stubble fields and waste grain with a minimum expenditure in tending. This brought about a considerable addition to the net agricultural or dairying return. The poultry industry during recent years has assumed an independent position among rural industries, notwithstanding that large numbers of poultry runs on wheat and dairy farms are still maintained; poultry farming is also carried on in conjunction with pig farming. In special poultry farms, breeding on scientific principles and a proper arrangement of the runs is secured, and feeding and reproduction are technically attended to, and proper shelter is provided either by means of trees or sheds. Poultry experts are engaged by the State Governments to instruct in matters that will amplify the returns. Poultry for consumption are extensively reared, and the egg-producing qualities of the birds have also been greatly improved by careful breeding.

2. **Oversea Trade in Poultry Products.**—The imports and exports of eggs shew a considerable balance on the side of imports, in each of the six years tabulated. The introduction of valuable poultry for breeding is evidenced by the fact that although the exports in 1903, 1904 and 1905 exceeded the imports in number, the imports were of greater value. The figures for frozen poultry shew that a considerable oversea trade is carried on:—

IMPORTS, EXPORTS AND NET EXPORTS OF EGGS AND LIVE AND FROZEN POULTRY, AUSTRALIAN COMMONWEALTH, 1901 TO 1906.

	1901.	1902.	1903.	1904.	1905.	1906.
EGGS.						
Imports ... dozen	123,597	136,163	161,099	249,379	84,517	83,925
„ ... £	3,833	4,077	3,748	4,437	1,943	2,184
Exports ... dozen	65,924	84,133	46,973	29,841	23,041	38,090
„ ... £	3,319	4,078	2,292	1,245	1,199	1,718
Net exports[1] dozen	—57,673	—52,030	—114,126	—219,538	—61,476	—45,835
„ „ £	— 514	1	— 1,456	— 3,192	— 744	— 466
LIVE POULTRY.						
Imports ... No.	[2]	[2]	577	1,454	1,417	3,220
„ ... £	1,462	1,305	1,167	2,079	1,984	1,747
Exports ... No.	[2]	[2]	1,388	2,062	4,000	2,806
„ ... £	470	1,190	371	1,086	1,863	1,767
Net Exports[1] No.	[2]	[2]	811	608	2,583	— 414
„ „ £	— 992	— 115	— 796	— 993	— 121	20
FROZEN POULTRY.						
Imports ... lb.	[2]	[2]	23,601	15,833	22,628	8,949
„ ... £	209	5,270	963	673	899	331
Exports ... pair	[2]	[2]	53,123	9,936	46,987	34,655
„ ... £	26,738	41,283	10,364	3,509	11,765	9,506
Net Exports[1] pair	[2]	[2]	[2]	[2]	[2]	[2]
„ „ £	26,529	36,013	9,401	2,836	10,866	9,175

1. — Signifies net imports. 2. Quantity not available.

3. **Interstate Trade in Poultry Products.**—South Australia is the largest supplier to the other States of the Commonwealth of poultry products generally, but Victoria has the largest Interstate market for frozen poultry.

INTERSTATE TRADE IN POULTRY AND POULTRY PRODUCTS, 1906.

State	Imports from other States of the Commonwealth.		Exports to other States of the Commonwealth.		Net Interstate Exports.[1]	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
			LIVE POULTRY.			
	No.	£	No.	£	No.	£
New South Wales	13,318	3,123	1,850	920	— 11,468	— 2,203
Victoria ...	690	395	930	499	240	104
Queensland ...	829	444	325	84	— 504	— 360
South Australia ...	196	65	13,384	3,324	13,188	3,259
Western Australia	1,239	676	52	17	— 1,187	— 659
Tasmania ...	594	428	325	287	— 269	— 141
			FROZEN POULTRY.			
	lbs.	£	lbs.	£	lbs.	£
New South Wales	44,150	1,604	21,438	720	— 22,712	— 884
Victoria ...	4,453	133	121,779	4,383	117,326	4,250
Queensland ...	56	2	3,411	129	3,355	127
South Australia ...	65	2	6,205	195	6,140	193
Western Australia	104,983	3,713	...	...	— 104,983	— 3,713
Tasmania ...	...	...	874	27	874	27
			EGGS.			
	Dozen.	£	Dozen.	£	Dozen.	£
New South Wales	1,091,994	38,869	46,968	1,822	— 1,045,026	— 37,047
Victoria ...	390,583	12,294	92,909	3,597	— 297,674	— 8,697
Queensland ...	762	74	217,896	6,942	217,134	6,868
South Australia ...	1,686	104	2,760,731	106,264	2,759,045	106,160
Western Australia	1,562,755	64,495	...	...	— 1,562,755	— 64,495
Tasmania ...	70,981	2,806	257	17	— 70,724	— 2,789

[1] — Signifies net imports.

§ 5. Bee Farming.

1. **The Bee-farming Industry.**—Bee farming, like poultry farming, has ordinarily been an adjunct to agricultural or dairying industries, and can hardly yet be said to have been organised as a distinct industry. The returns collected shew that, while production varies greatly, there is on the whole a steady improvement, to which the large increase in the Western Australian product since 1902 has largely contributed. The annual average returns of honey from the hives range between 20 lbs. and 600 lbs. per hive.

2. **Honey and Beeswax.**—The particulars of honey production, available only for three States, are as given below :—

NUMBER OF HIVES AND PRODUCTION OF HONEY AND BEESWAX, 1901 TO 1907.

			1901.	1902.	1903.	1904.	1905.	1906.	1907.
N.S.W. ...	Hives ...	No.	58,954	53,089	46,243	58,330	64,730	48,632	...
,, ...	Honey ...	lbs.	2,397,698	2,259,177	1,815,480	2,147,295	3,023,468	1,841,236	1,907,744
,, ...	Beeswax ...	lbs.	49,337	51,735	37,207	49,589	58,610	39,620	34,690
Victoria ...	Hives ...	No.	21,412	22,083	32,126	40,759	49,120	41,780	48,005
,, ...	Honey ...	lbs.	957,020	572,477	1,199,331	833,968	1,906,188	1,209,144	2,965,299
,, ...	Beeswax ...	lbs.	15,269	13,530	23,061	18,979	28,653	21,844	46,780
W.A. ...	Hives ...	No.	3,880	4,939	7,109	8,705	12,837	12,825	...
,, ...	Honey ...	lbs.	138,787	42,082	262,968	179,271	287,498	555,079	392,584
,, ...	Beeswax ...	lbs.	3,158	2,978	3,478	4,533	6,211	9,303	8,302

3. **Oversea Trade in Bee Products.**—Both honey and beeswax are produced in the Commonwealth in sufficient quantities to supply all local requirements, and a considerable quantity of each is sent oversea.

IMPORTS, EXPORTS, AND NET EXPORTS OF HONEY AND BEESWAX, AUSTRALIAN COMMONWEALTH, 1901 TO 1906.

	1901.	1902.	1903.	1904.	1905.	1906.
			HONEY.			
Imports ... lbs.	71	415	205	1,233	12,036	2,618
,, ... £	2	12	5	10	138	27
Exports ... lbs.	189,048	85,774	21,995	77,452	112,039	58,297
,, ... £	2,543	1,644	446	875	1,333	1,001
Net Exports lbs.	188,977	85,359	21,790	76,219	100,003	55,679
,, ,, £	2,541	1,632	441	865	1,195	974
			BEESWAX.			
Imports ... lbs.	11,301	3,135	12,851	12,520	9,767	13,725
,, ... £	413	180	652	694	593	787
Exports ... lbs.	64,139	68,570	63,421	39,795	86,720	30,570
,, ... £	3,439	3,135	3,375	2,144	4,863	1,768
Net exports ... lbs.	52,838	65,435	50,570	27,275	76,953	16,845
,, ,, ... £	3,026	2,955	2,723	1,450	4,270	981

4. **Interstate Trade in Bee Products.**—The interstate trade in honey and beeswax in 1906 is given below:—

INTERSTATE TRADE IN BEE PRODUCTS, 1906.

State.	Imports from other States of the C'wealth.		Exports to other States of the Commonwealth.		Net Interstate Exports.[1]	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
			HONEY.			
	lbs.	£	lbs.	£	lbs.	£
New South Wales ...	326,875	3,844	50,761	654	—276,114	—3,190
Victoria	264,035	3,132	131,557	2,322	—132,478	— 810
Queensland	2,522	45	78,849	909	76,327	864
South Australia ...	5,266	64	494,643	5,962	489,377	5,898
Western Australia ...	73,343	1,479	5,260	62	— 68,083	—1,417
Tasmania	89,149	1,347	120	2	— 89,029	—1,345
			BEESWAX.			
	lbs.	£	lbs.	£	lbs.	£
New South Wales ...	3,433	185	637	33	— 2,796	— 152
Victoria	3,299	174	569	35	— 2,730	— 139
Queensland	41	3	2,514	138	2,473	135
South Australia ...	169	10	1,619	94	1,450	84
Western Australia ...	1,029	65	112	6	— 917	— 59
Tasmania	134	10	2,654	141	2,520	131

[1] — Signifies net imports.

§ 6. Graphical Representation.

Two graphs shewing respectively the increase in dairy production and in the exports of butter will be found on page 296.

SECTION X.

FORESTS, FORESTRY, AND FORESTAL PRODUCTS.

§ 1. The Forests of Australia.

1. **Extent of Forests.**—Although no definite survey of forest lands has been made on a uniform basis for the different States of Australia, the following table gives the results of careful estimates made for each State:—

FOREST RESERVES AND FOREST AREAS, STATES AND COMMONWEALTH, 1906.

State.	Specially Reserved for Timber.	Total Forest Area.	Percentage of State Area.		Percentage of Commonwealth Area.	
			Specially Reserved	Total Forest.	Specially Reserved	Total Forest.
	Acres.	Acres.	%	%	%	%
New South Wales	5,946,000	20,000,000	2.99	10.07	0.31	1.05
Victoria ...	5,525,000	11,797,000	9.82	20.97	0.29	0.62
Queensland ...	3,460,000	40,000,000	0.81	9.32	0.18	2.10
South Australia ...	170,835	3,840,000	0.03	0.66	0.009	0.20
Western Australia	—	20,400,000	—	3.27	—	1.07
Tasmania ...	266,000	11,000,000	1.59	65.56	0.014	0.58
Commonwealth	15,367,835	107,037,000	—	—	0.81	5.62

The actual area of wooded land is probably in all cases much greater than shewn above. For example, that of Western Australia is estimated at 97,900,000 acres; Queensland has probably 143,000,000 acres; and Victoria has a considerable extent of "Mallee" country not included in the above estimate. The basis of estimation for each State in any case cannot be regarded as quite identical. Considerable areas not included as forest lands possess timber of local value.

The absolute and relative forest areas of Australia and other countries are shewn in the table on next page.

In each of the States areas have been set apart as State forests and "timber reserves," in some cases the reservation being made in perpetuity, in others for a definite period, in others again the reservation may be cancelled at any time. The characteristics of the forest areas of the different States are referred to seriatim.

RELATIVE AREAS OF FOREST LANDS, AUSTRALIA AND OTHER COUNTRIES, 1906.

Country.	Total Forest Area.	Percentage of Total Area.	Country.	Total Forest Area.	Percentage of Total Area.
	Sq. Miles.	%		Sq. Miles.	%
Australian C'wealth	167,245	5.62	Rumania ...	10,640	20.98
New Zealand ...	32,150	30.69	Sweden	25,648	14.84
United Kingdom ...	4,325	3.56	Norway	26,330	21.21
France	32,421	15.66	Russia in Europe	860,781	40.55
Algeria	10,872	3.17	United States ...	1,000,000	33.67
Germany	21,868	10.47	Canada	1,248,800	33.34
Switzerland ...	3,296	20.63	Cape Good Hope...	537	0.19
Italy	15,808	14.29	British India ...	107,125	9.85
Austria	37,759	32.58	Japan	27,298	18.49
Hungary	34,700	27.66			

2. **Characteristics of State Forest Areas.**—(i.) *New South Wales.* Great diversity exists in the more dense distribution of timber trees in the coastal region, between the range and the Pacific Ocean. The areas of natural forest, however, are found in nearly every part of the State except the wide plains of the Murrumbidgee, Lachlan, and Darling districts, the level surface of which is chiefly covered with salt bush, scrub, and indigenous grasses, while the tree-growth is, as a rule, confined to belts of red gum, box, sheoak, and myall along the courses of the rivers and their tributaries, and to groves of cypress pine at intervals. The tree-clad regions of the State may be divided into open, brush, and scrub forests. The first class has the widest distribution, being found in every geological formation, and including some of the finest timbers, such as many species of eucalyptus, angophora, and other genera of the natural order of myrtles. Among the hardwoods, red gum usually marks the courses of streams, while on the rough and stony mountain and hill ridges, with their sheltered gorges, are found several varieties of ironbark, blackbutt, tallowwood, spotted gum, grey box, red mahogany, forest red gum, Sydney blue gum, and turpentine. The brush or jungle forests occupy a considerable tract of country between the Dividing Range and the coast. In this region, interspersed occasionally with large Moreton Bay and other figs, fern trees, cabbage trees, and palms, grow some of the most beautiful timbers known for cabinet work and veneers, such as the red cedar, rosewood, silky oak, beech, red bean, beefwood, tulipwood, and coachwood. In addition to these, there are considerable supplies of the colonial or hoop pine, and the brown or berry pine. The scrub forests are represented by the red or black and white varieties of the cypress pine, and many species of acacia and eucalyptus. These are chiefly situated in the western portion of the State, and although the pines and some of the eucalypts are useful for local building and fencing, the bulk of the timber is of little commercial value.

(ii.) *Victoria.* The mountain ranges, principal of which are the Dividing Range and the Australian Alps, constitute the true forest regions of the country, the trees attaining considerable height and girth, and the brush or scrub growth great luxuriance. The lower elevations of the ranges, remote from settlement, are densely wooded to their summits, but the peaks above the winter snow-line are either bare or covered only with dwarfed vegetation. Dense and luxuriant forests characterise the Otway Ranges and Gippsland, south of the Main Divide. The tree-growth in the Grampians consists chiefly of stringy-bark, white gum, grey and yellow box, and white ironbark, with some red gum and wattle. In the Pyrenees there are more valuable hardwoods, chiefly blue gum and messmate, with stringy-bark, grey and yellow box, red and white ironbark on the lower levels. In Wombat Forest, extending along both sides of the Dividing Range from Creswick to Mount Macedon, the timber is almost wholly young messmate of good quality, with peppermint and swamp gum. Further eastward along the range messmate and stringy-bark prevail, with grey and yellow box and ironbark on the low country. In Delatite, and in the lower ranges of the Australian Alps generally, the timber increases in height and girth, and includes blue gum, messmate, and peppermint of fine quality, with ribbon gum, woollybutt, and silvertop on the higher levels, and grey and yellow box with stringy-bark along the lower slopes and valleys. The northern plains, extending westward from Wodonga to the Grampians, are thinly covered with open forests, the limits of the prevailing trees being defined in clearly-marked belts. Thus the main belt of red gum follows the course of the Murray and extends along the valleys of its tributaries, but is interspersed at intervals near the river with sand ridges bearing grey box and cypress pine. Southward of this belt, and between the streams, the prevailing trees are grey or yellow box, with red and white gum and stringy-bark on the low ridges. From Chiltern a line drawn westward through Rushworth, Heathcote, Bendigo, Dunolly, and St. Arnaud marks a long belt of ironbark, of both red and white varieties, interspersed with stringy-bark and grey or yellow box. In the north-west, between the Wimmera Plains and the Murray, the dwarf eucalypt known as the mallee scrub covers the plains, with belts of cypress pine at intervals, and red gum and box along the courses of streams and lakes. The south-west is poorly timbered, the prevailing tree being stringy-bark, with red gum along the streams and white gum, box, lightwood, and honeysuckle on the plains and undulating country. In the Otway district are valuable timber forests; over 280 square miles are covered with blue gum, spotted gum, messmate, and mountain ash or blackbutt of fine quality, with some stringy-bark and white gum, while the valleys between the ridges bear valuable timber of fine grain such as blackwood, beech, satin box, olive, sycamore, and pencil cedar. Eastward of Melbourne, on the watershed of the Yarra, there is another fine forest region, the trees consisting of spotted gum, mountain ash, messmate, and white gum, with blackwood, beech, sassafras, and silver wattle in the valleys. The ranges of Southern Gippsland bear blue gum, spotted gum, mountain ash, and yellow stringy-bark, while in the western and northern portions of the same district grow the mountain stringy-bark, spotted gum, blackbutt, and the Gippsland mountain ash or silvertop, with woollybutt and ribbon gum on the higher elevations of the Main Divide. In the eastern part of the district, stretching from the lakes towards the Genoa River, are found the Bairnsdale grey box, the Gippsland mountain ash or silvertop, white and yellow stringy-bark, red ironbark, and bloodwood. The prevailing timber in this part of Gippsland is the white stringy-bark, which forms large forests from the foot-hills of the Divide to the sea-coast.

(iii.) *Queensland.* The extensive forests of Queensland yield a great variety of woods, esteemed for their strength, durability, or beauty. The principal merchantable timbers lie between the eastern seaboard and the Great Dividing Range, which runs roughly parallel to, and about 200 miles from the coast. At about the 21st parallel of south latitude, a spur runs westward nearly to the South Australian border, and bears on its crests and slopes much valuable timber. Forests are also found on the Denham, Johnstone, and Gilbert Ranges. The principal eucalypts are ironbark, grey, spotted, and red gum, blackbutt, and turpentine; Moreton Bay, brown, and Bunya Bunya pines represent the conifers; and red cedar, beech, tulipwood, rosewood, red bean, and black bean, are among the brush timbers of fine grain. On the extensive plateaux west of the Divide there is but little timber; and towards the vast basin of the interior, the low ridges and banks of the short water-courses bear a growth of stunted eucalypts such as the gimlet gum, the desert sheoak, acacias, and mallee.

The chief supply of mill timber (eucalypts, Moreton Bay pine, etc.) is in the southern coastal region, from the New South Wales border as far north as Gladstone. In the regions between Rockhampton and Ingham the supply is not so plentiful; but northward of the latter town, the red cedar, kauri pine, and black bean, are luxuriant. Large supplies of these valuable trees are found on the Barron Valley reserves, and in other localities between Ingham and Port Douglas. Inland from this zone of heavy forest is another, less densely timbered, bearing cypress and other pines, ironbarks and acacias. In the south-western regions of the State the cypress pine flourishes.

(iv.) *South Australia and Northern Territory.* The principal forest districts of South Australia proper are restricted largely to the hill ranges in the neighbourhood of Adelaide and Spencer Gulf, and the trees have not the fulness and lofty growth of the eastern and south western borders of Australia. Red gum is widely distributed, though never far from water; and there are belts of timber where, from the general appearance of the surrounding country, they would hardly be expected. The stringy bark has its habitat principally in the hills, and is but rarely seen on the plains; other useful hardwoods are the white and blue gum and peppermint. Blackwood (in demand for cabinet work) is common in the south-east and along the eastern border, but is rare near Adelaide. Wattle also is cultivated for its gum and bark. Sheoak appears in districts less thickly forest-clad, and ti-trees inhabit low, damp situations. The sandalwood tree grows luxuriantly in Yorke's Peninsula. On the great plains of the interior there is little vegetation, patches of forest country being occasionally found, while here and there fertile spots of grass land, but generally not of large extent, are met with. Groups of stunted shrubs, and small ramified trees—sheoak, eucalyptus, and wattle—mostly of limited extent, rise from the plains like islands.

In Central and Northern Australia there is little forest, until the hills where the waters of the northern river system take their rise are encountered. On the plains to the north of the McDonnell Ranges there is a thin clothing of mulga scrub, with gum trees marking the water courses. Occasionally patches of heavier gum forests are met with. Stirling Creek is lined with the bean tree. The mulga scrub thickens, and with stunted and mallee gums furnishes a uniform vegetation as far north as Powell's Creek. Here, with red gums still lining the water-courses and flooded gums on the flats, the vegetation becomes more varied. On the ranges pines, fig trees, and orange trees (*capparis*) occur. Heavy timber clothes the uplands about the Roper River, and the tableland which stretches across the territory at a distance from the coast of from thirty to 100 miles bears large paperbark trees, Leichhardt pines, and palms. On the higher steppes there is also abundance of bloodwood and other varieties of eucalyptus, besides other kinds of trees. Many prominent fibre plants are native to the territory.

(v.) *Western Australia.* The coastal timber belt runs along the western shore from the Murchison River to the Leeuwin, and along the southern shore from that point to beyond Albany, clothing with trees the Victoria, Herschel, Darling, and Stirling Ranges. Pre-eminent among the trees of this State for strength and durability are the jarrah and karri. A great belt of the former stretches eastward of the Darling Range to upwards of a hundred miles in breadth, with a length of 350 miles. Between this region and the coast are two well-marked belts of tuart and red gum. In the extreme south-west of the State the main karri belt stretches from Augusta to Albany. Eastward of the jarrah belt a strip of white gum encloses a narrow belt of York gum, its southern extremity almost reaching the coast, while its northern limit extends even beyond that of the jarrah tract. Still further east the forest thins, a poorer growth of white gum giving place to brushes, scrub, and dwarf trees. Along the shores of the Great Australian Bight there are stunted eucalypts, with casuarinas and wattle. In the north-west, on the King Leopold and St. George's Ranges, there are forest areas, but from Dampier Land to below Shark Bay there is no coastal forest, and in many cases the stunted bush and scrub lands infringe on the sea-coast.

(vi.) *Tasmania.* The Tasmanian forest consists chiefly of eucalypts, widely distributed over the island; and of conifers, such as the Huon, the King William, and the celery-top pines, flourishing in the western and southern parts. The principal hardwoods of the eucalypt family are the blue gum, stringy-bark, peppermint, and silvertop ironbark, while among woods of fine grain are the blackwood, beech or myrtle, sassafras, native cherry, and sheoak. Black and silver wattles also inhabit various parts of Tasmania.

3. **Distribution of Timber in the Commonwealth Generally.**—The more conspicuous timber regions of Australia as a whole are the eastern and southern portions, including Tasmania, and, again, the south-western portion northwards and eastwards from Cape

Leeuwin. In regard to distribution, on the eastern side of the continent the larger timber is found on the crests and coastal slopes of the mountain ranges, but in the south-west, in addition to the vegetation between mountains and sea, a large area of forest stretches inland from the coastal ranges. The hills encircling Adelaide and Yorke and Eyre Peninsulas also bear good forest. The Kimberley district is timbered, and in the Northern Territory and round the shores of the Gulf of Carpentaria there are considerable forest areas. But the coastal regions of West and North-west Australia, except in the case of the districts named and the shores of the Great Australian Bight and Encounter Bay, are devoid alike of mountains and forests. The interior of the continent is thinly timbered, or almost destitute of vegetation, an occasional limited area of forest, generally in connection with mountain systems (though these themselves are scarce), acting as a relief in the landscape, which but for these presents to the eye all the features of a dreary and arid waste. The accompanying map gives a general idea of the distribution.

4. **Distribution of Timber in New Zealand.**—In the North Island the growth in the Hauraki Peninsula is of a mixed character, kauri being predominant, with red, white, and silver pine, beech, and tawa, extending from the Waikato River to the North Cape. Kauri gum, formed by the hardening of the exuded resin, is dug out of the ground in large quantities and exported chiefly to Europe and America, where it is largely used in the manufacture of varnishes, and also in cotton-spinning centres for glazing calico. Large numbers of men follow the calling of gum-digging, either regularly or intermittently. The great totara region extends from the central part of the west coast to the east and south-east coast, and from the Bay of Plenty southward to Cape Palliser. Among other trees in this region are rimu, white pine, beech, and tawa. The red pine district occupies a considerable tract of the south-western side of the island, and extends from the Makau River to Wellington, being interspersed with totara, tawa, and black and white pine. In the Middle Island the rimu or red pine and the several species of beech may be regarded as the typical forest trees. The former has a very wide range. following the coastal region from Cape Campbell, the extreme north-eastern point, to Cape Farewell on the north-west, and thence the whole of the western and southern coast-line to the Clutha River, while along the eastern coast it is found in well-defined belts near Dunedin, Waimate, and Banks Peninsula. The beech country forms a large. broad belt running through the island from north to south along the Dividing Range.

§ 2. Forestry.

1. **Objects.**—Economic Forestry, aiming at the conservation of forestal wealth by safeguarding forests against inconsiderate destruction, and by the suitable re-afforestation of denuded areas, is essential to the preservation of industries dependent upon an adequate supply of timber, and to the perpetuation of a necessary form of national wealth. Though in Australia large areas of virgin forests still remain, the inroads made by. timber-getters, by agriculturists, and by pastoralists—who have destroyed large areas by "ringbarking"—are considerable; and it is not unlikely that climatological changes are caused thereby. For it would appear that variations in climate, and alternating periods of drought and flood, desiccation and erosion of soil, with loss or diminution of fertility, have resulted from forest denudation in countries bordering the Mediterranean. In many of the States of America diminished rainfall is said to have followed the destruction of large forest areas. On the other hand beneficial consequences appear also to have followed on the planting of trees on denuded lands, or along encroaching coasts, and it is obvious that a forest covering tends to beneficially regulate the effects of rainfall.

2. **Forestry Departments.**—Each State of the Commonwealth, excepting Tasmania. has organised a forestry department or branch of service specialy charged with forestal matters. The following table gives a comparative indication of the attention paid to the subject:—

STATE FORESTRY DEPARTMENTS, 1906.

Particulars.	N.S.W.	Victoria.	Q'sland.	Sth. Aust.	West. Aus.	Tas.
Designation of officer in charge	Chief Forest Officer	Conservator of Forests	Director of Forests	Conservator of Forests	Insp.-Gen. of Forests.	*
Salaries of persons engaged in administration and control £	17,080 †	1,486	300 ‡	450	810	310
Salaries of technical experts, forest rangers, etc. ... £		8,500	780 †	770	3,395 †	41
Incidental expenses ... £	357	4,269 ‖	576	149	1,301	75
No. of persons forming office staff	7	5	1	3	5	*
No. of persons forming field staff	62	56	3	17	13	*

* Administered by Lands Department. † Including travelling allowances. ‡ Excluding travelling expenses. ‖ Including travelling and forage allowances.

The revenue and expenditure of the States Forestry Departments from 1901 to 1906 are given below:—

REVENUE OF STATE FORESTRY DEPARTMENTS, 1900-1 TO 1906-7.

State.	1900-1.	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.
	£	£	£	£	£	£	£
New South Wales...	14,421*	19,813*	31,872*	36,264*	34,162	42,738	50,937
Victoria	14,916	16,735	15,455	16,590	17,230	21,508	24,971
Queensland ...	7,608*	8,877*	6,663*	8,959*	11,440*	11,576*	14,560
South Australia ...	3,314	3,109	4,626	3,867	3,048	2,832	2,981
Western Australia	18,477	18,752	20,478	20,018	18,479	21,216	22,783
Tasmania	2,141	2,722	3,155	2,859	3,504	3,505	4,220
Commonwealth ...	60,877	70,008	82,249	88,557	87,863	103,375	120,452

* For calendar year ended previous 31st December.

EXPENDITURE OF STATE FORESTRY DEPARTMENTS, 1900-1 TO 1906-7.

State.	1900-1.	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.
	£	£	£	£	£	£	£
New South Wales...	5,101*	5,627*	10,639*	17,080*	16,202	16,639	20,259
Victoria	18,561	18,174	16,766	16,136	17,733	21,974	21,108
Queensland ...	4,300	4,400	4,500	4,600	4,800	5,200	6,700
South Australia ...	6,661	6,512	5,747	5,843	6,067	6,445	6,801
Western Australia	2,747	4,301	3,789	4,192	5,089	5,785	6,270
Tasmania ...	375	322	273	254	513	469	426
Commonwealth ...	37,745	39,336	41,714	48,105	50,404	56,512	61,564

* For calendar year ended previous 31st December.

3. **Sylviculture.**—The growing recognition of the necessity for systematic sylviculture has led to the creation in all the States except Queensland and Tasmania of a number of sylvicultural nurseries and plantations.

(i.) *New South Wales.* In this State a small forest nursery is maintained at Gosford, between Sydney and Newcastle; from which young trees are widely distributed throughout the State, the bulk being issued to municipal councils and farmers, and for planting in parks, town reserves, hospital grounds, and cemeteries. Large sums have been disbursed by the State in improvement fellings and the thinning out of young timber, principally in the Bogan, Narrandera, and Murray River districts. Over a quarter of a million acres of pine forest and red gum have been so treated.

(ii.) *Victoria.* In Victoria there are four forest nurseries, the largest being situated at Macedon, the smaller at Creswick, Havelock, and Tintarra. At Macedon the arboretum contains many fine specimens of the conifers and deciduous trees of Europe, America, and Asia. While the bulk of the yields are retained for the State plantations, there are considerable distributions for public parks and recreation reserves, "Arbor-day" planting of streets and roads, municipal councils and water trusts, mechanics' institutes and libraries, cemeteries, State schools, and other institutions, and farmers and private persons, those in dry districts receiving first consideration.

Among the principal native hardwoods raised and distributed are blue gum, sugar gum, and tallowwood, with some jarrah for the plantations; among conifers, the Monterey, Corsican, Black Austrian, Canary Island, Maritime, and Aleppo pines, the blue pine of India, the American white and yellow pines, with several spruces; and among other exotics, peppers, Indian cedars, oaks, elms, planes, silver poplars, sycamores, and chestnuts.

The principal forest plantation is along the lower slopes of the You Yangs, near Geelong, where about 1000 acres have been enclosed and planted with eucalypts and conifers. Good results have attended the cultivation of the broad leaf and feather leaf wattles.

At another plantation, viz., at Sawpit Gully, among the foothills of the Dividing Range, near Creswick, conifers are chiefly grown. Minor plantations of blue gum and sugar gum are established at Havelock and Majorca, near Maryborough; and at Mount Macedon, the principal species of oak, elm, ash, plane, sycamore, pine, spruce, eucalypts, and willows are planted.

(iii.) *Queensland.* The questions of replanting and further reservation have lately been attracting attention, and the prominence given to them will probably greatly influence forest policy.

(iv.) *South Australia.*—In this State there are several plantations, the most important being at Bundaleer and Wirrabara, situated some 150 and 190 miles respectively to the north of Adelaide in the direction of Spencer Gulf. Of the reserved area, about one-fifth only, it is said, ever bore timber of commercial value, the remainder being covered for the most part with stunted vegetation. Owing to the absence of high mountain ranges and the dryness of the climate, the forests are not dense. Special attention has been given in South Australia to sylviculture, and great success has been achieved in clothing areas of treeless plain and hill slope with belts of young trees, such as blue, sugar and red gum, and white ironbark. In some parts the Tasmanian blue gum (*E. globulus*) flourishes, but great success has also been attained with the sugar gum (*E. corynocalyx*), a tree indigenous to the State itself. It is found chiefly in the Flinders Range, and used for railway sleepers, telegraph poles, coachbuilding, and in wharf and jetty construction. Two other eucalypts found in South Australia, the white ironbark (*E. leucoxylon*), known locally as "blue gum," and the grey box (*E. hemiphloia*), furnish strong, tough, and durable timber, inlocked in grain and suitable for the same purposes as sugar gum. The common flooded variety of red gum, which has a fairly wide distribution, being found on clay flats and along streams and water-courses, has also been grown in the plantations, but not with the same success as sugar gum. Among conifers which have been grown with fair success are the Monterey, the Maritime, Aleppo, and Stone pines. The Monterey pine (*P. insignis*) outstrips all other trees in growth, and its timber, though softer than other first-class pines, has been utilised for deal tables, packing cases, picket fencing, shelving, and generally for purposes where common deal is useful. The maritime, Aleppo, and stone pines are naturally of slower growth. In Europe they furnish useful timber, but in these plantations have not yet reached the age suitable for utilisation. The upright poplar (*P. fastigiata*) growing well over a large area, serves for packing cases, flooring boards, etc. The locally-grown American ash (*Fraxinus americana*) has been used in coachbuilding work, and compares well in quality with the imported American ash. The area suitable for its cultivation in South Australia is, however, very limited, as it requires favourable conditions of soil and climate.

During the last quarter of a century the Forest Department has issued very large numbers of young plants to the public free of charge, for wind breaks, avenues, and for the shelter of homesteads and buildings generally. Formerly, but not now, bounties were paid under the Forest Act for the encouragement of private persons in planting timber trees.

(v.) *Western Australia.* A State sylvicultural nursery is established at Drake's Brook, on the south-western railway, the site chosen being a ti-tree swamp, exotic trees of temperate climates being raised. The planting of the Monterey, Maritime, Aleppo, and Canary Island pines, the blue pine of the Himalayas (*P. excelsa*), the Indian cedar, Lawson's cypress, several kinds of poplar, the Virginian catalpa, white cedar, and American ash has been successful. A large number of pepper trees and sugar gums were raised, chiefly for shade purposes. The trees are sold or given away to settlers, being distributed chiefly in the goldfields region and other districts with little natural forest.

There are also three forest plantations—one for conifers at Bunbury, a second for Australian wattles at Spencer's Brook, and a third for the indigenous sandalwood at Meckering. The planted areas are flourishing, the trees making very healthy growth.

Particulars regarding nurseries and plantations in 1906 are given hereunder:—

NURSERIES AND PLANTATIONS, 1906.

Particulars.	New South Wales.	Victoria.	Qu'nsland.	South Australia.	Western Australia.	Tasmania.
Expenditure on plantations and upkeep of sylvicultural nurseries	£697	£7530	nil	£6106	£223	nil
No. of persons engaged in nurseries	8	17	nil	13	6	nil
No. of sylvicultural nurseries ...	1	4	nil	7	1	nil
Area of sylvicultural nurseries ...	67 ac.*	30 ac.	nil	7 ac.	17 ac.	nil
No. of forest plantations ...	1	13	nil	91	3	nil
Area of forest plantations ...	20 ac.	9676 ac.	nil	9396 ac.	150 ac.	nil
Extent of public distribution of trees or number of trees issued ...	53,152	108,819	†	290,149	50,000	nil

* 16 acres only are planted.

† There are no forest nurseries issuing trees in Queensland, but a small number of economic and ornamental trees are issued by the Department of Agriculture.

§ 3. Commercial Uses of Principal Australian Timbers.

The uses of the more important of Australian timbers are many and various; four varieties of ironbark, viz., white or grey (*E. paniculata*), narrow-leaved (*E. crebra*), broad-leaved (*E. siderophloia*), and red (*E. sideroxylon*) are largely used for public works, preference being given to the white and narrow-leaved varieties. These timbers are used extensively in the building of bridges and culverts, for railway sleepers and fencing posts, and for framing, naves, spokes, poles and shafts in carriage and waggon building. Ironbark beams are of great strength, hence it is largely employed for girders and joists of upper floors, especially in stores for heavy goods.[1] Another red ironbark (*E. leucoxylon*), heavy, dense, and strong, is greatly valued for bridge beams and piles. Tallowwood (*E. microcorys*) is strong, heavy, very durable, not easily split, and turns and planes well. It is used for bridge-decking, house-flooring (being peculiarly suitable for ballrooms), girders, piles, and fencing posts, and especially for paving blocks, giving even and regular wear under heavy traffic. Even better in this latter regard is blackbutt (*E. pilularis*). a fine hardwood for house and ship building, as well as street paving. Grey gum (*E. propinqua*), makes excellent railway sleepers, and is used for felloes and spokes in coach building. It makes very durable fencing posts, and is also sometimes split for shingles. Murray red gum (*E. rostrata*), the common river gum of all the eastern colonies, is one of the best hardwoods in contact with the ground, being largely used for poles, house foundations, wood paving, and railway sleepers. It is also extensively cut for mining shafts and public and municipal works. The forest variety of red gum (*E. tereticornis*) serves the same purposes as the river red gum. White mahogany (*E. acmenoides*) is used for posts, poles, girders, and similar classes of work, being an exceedingly durable timber. Red mahogany (*E. resinifera*) is largely employed for general building work, street paving, fencing, and weatherboards. It is very durable, and hardens greatly with age. Grey box (*E. hemiphloia*), is very durable in contact with the ground, and is hence used for railway sleepers (lasting from thirty to thirty-five years in the track), telegraph poles, mine props, fence posts, piles, girders, and for heavy framing and naves, wheel cogs, shafts, dray poles, spokes, etc. Bairnsdale grey box (*E. bosistoana*) serves similar purposes. Brush box (*Tristania conferta*), another hard and durable wood, is used for tram rails, bullock yokes, tool handles, planes, etc. Sydney blue gum (*E. saligna*) is greatly valued by shipwrights and wheelwrights, and furnishes ships' plank, felloes of wheels, etc. It is also used for buildings, and makes very durable paving blocks. Woollybutt (*E. longifolia*) is used for house building, fencing, felloes, spokes, and wheelwrights' work generally. Being durable in contact with the ground, and resistant to heavy traffic, it is also used for street paving. Spotted gum (*E. maculata*) is one of the best hardwoods for bending, even when cold, and is therefore specially valuable in wheelwrights' and coachbuilders' work for poles, shafts, crosspieces, naves, and spokes; also for framing and house building, tram rails, ship planking, decking of bridges, and wood paving. Turpentine (*Syncarpia laurifolia*) is of great durability in the ground or under water, being used for piles of jetties, wharves, bridges, pillars and girders of buildings, wood paving, and hewn posts and rails. Yellow stringy-bark (*E. muelleriana*) is chiefly used for jetty and pier work, and for fencing posts. Blue gum (*E. globulus*) is a valuable timber with straight, symmetrical bole, used for upper timbers and decking in jetty and bridge work. bridge piles, shafts, felloes, spokes and frame work of vehicles, and in general building and construction. Spotted gum (*E. goniocalyx*) furnishes a hard, heavy, and durable timber, similar in appearance to blue gum, and serving the same purposes. Yellow box (*E. melliodora*) bears a large quantity of blossom, and hence is a favourite tree with beekeepers. Its timber is used for piles and posts, squared beams, and stringers for bridges. Messmate (*E. obliqua*) is largely sawn by mills for weatherboards, studs, rafters, joists. etc., and is also used for railway sleepers and fencing posts. Stringy-barks (*E. macrorrhyncha*, *E. capitellata*, *E. piperita*) are sawn by mills into ordinary building timber, and split by settlers into posts and rails and rough building material. Mountain ash (*E. amygdalina regnans*) is sawn into building material, and is also split into palings. shingles, rails, and mining laths. Silvertop (*E. sieberiana seu virgata*)—called also Gippsland mountain ash, green top, and white ironbark—is used for ordinary building purposes, and for fencing rails and rough construction. Sugar gum (*E. corynocalyx*) is held in high repute on account of its toughness and durability, and is chiefly used for railway sleepers, telegraph poles, coach building, and in wharf and jetty construction. White or manna gum (*E. viminalis*) is not a good weather timber, but is suitable for interior construction, such as house frames and floors.

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[1] Ironbark girders do not burn rapidly and often stand a fire when iron girders yield through the effect of the heat.

The preeminent timber trees of the West are jarrah (*E. marginata*) and karri (*E. diversicolor*). Jarrah is in great request for piles in jetty and bridge construction, and for railway sleepers and street paving. It also furnishes a favourite material for boat-building, fencing, and rough furniture, and makes excellent charcoal. Karri is heavy, dense, elastic, and tough, not so easily wrought as jarrah, and used for bridge-decking, flooring, planking, spokes, felloes, shafts, and street-paving. Tuart (*E. gomphocephala*) is exceedingly strong and tough, suitable for the framework of railway waggons, bridge supports, buffers, keelsons, shafts, wheelwrights' work, and generally for all purposes where great strength and hardness is necessary. The red gum (*E. calophylla*) is a fine shade tree, and is valued for the shelter it affords to cattle and sheep. Its timber, however, is not held in much esteem; but in short lengths it is employed for wheelwrights' work and agricultural implements. Its gum or kino has medicinal properties, and is used locally for tanning hides. Wandoo (*E. redunca*) is used for fencing, wheelwrights' work, and railway buffers and sleepers. The blackbutt (*E. patens*), York gum (*E. loxophleba*), and Yate (*E. cornuta*) of the West are largely used for fencing, building, and rough construction.

The Moreton Bay or hoop pine (*Araucaria cunninghami*) is used for interior work (flooring, ceiling, and lining boards) and for packing cases and butter boxes. Brown pine (*Podocarpus elata*) is also used for interior work, and for bridge, jetty, and pier piles. Cypress pine (*Callitris*), including red or black pine (*C. calcarata*); Murray pine (*C. verrucosa*), Port Macquarie pine (*C. macleayana*), and the Richmond River cypress pine (*C. columellaris*) are used for buildings liable to attacks of white ants, being strongly resistant to these pests. Callitris is also suitable for bridge decking and makes fine fuel. Red cedar (*Cedrela australis*) furnishes timber of great beauty; it is easily worked and very durable, and is used for furniture and cabinet-making, doors, panelling, and interior fittings generally. Rosewood (*Dysoxylon fraserianum*) is easily wrought, and is used for furniture, turnery, carving, cabinet work, mouldings, planes, window joints, house-fittings, and wine casks. Red bean (*Dysoxylon muelleri*) has a finely-figured grain and is an excellent furniture wood. White beech (*Gmelina leichhardtii*) is durable and easily worked, and is in great request for decks of vessels, furniture, picture frames, carving, flooring, house-fittings, vats, casks, and general coopers' work. Silky oak (*Grevillea robusta* and *Orites excelsa*) are also in request for coopers' work, and make handsome furniture and wainscoting. The silky oak has also been used for butter kegs, buckets, churns, etc., and makes good butter boxes for the local markets. Black bean (*Castanospermum australe*), or Moreton Bay chestnut, is used for furniture, cabinet-making, and gun stocks. Tulip-wood (*Harpullia pendula*) is highly esteemed for cabinet work, being used for door panels, dadoes, and billiard tables. Coachwood (*Ceratopetalum apetalum*) is suitable for boat-building, cabinet work, and coach-building. Kauri pine (*Agathis palmerstoni*) gives a light, strong, and durable timber, and is used for general building and construction, wainscoting, furniture and joinery, railway carriages, and ship-decking. Blackwood (*Acacia melanoxylon*) is very strong and durable, diminishing, however, greatly in weight in seasoning, though shrinking very little in volume. Figured blackwood is a beautiful timber; it is used for furniture, such as billiard tables, chairs, secretaires, casings of pianofortes and organs, and general cabinet work; dadoes, panelling of railway carriages, boat-building, picture frames, wheel naves, gun stocks, walking sticks, and a great variety of useful and ornamental purposes; it is also split into staves for wine and tallow casks. Evergreen beech (*Fagus cunninghami*) yields also a handsome timber, used for furniture, sashes and doors, light joinery, wood-carving, picture frames, and cog-wheels. Huon pine furnishes a fine, strong, and light timber; it is almost indestructible in water, and hence is largely used for boat planking; its beautiful grain brings it into request for furniture, panelling, and wainscoting. The King William variety is very tough, being used for racing sculls; it is also a favourite timber in joiners' work. Celery-top pine is strong and heavy, suitable for furniture, flooring, house frames, coopers' work, and masts. Other Australian brush timbers of minor importance are sassafras (*Atherosperma moschatum*), used for saddle-trees and boot lasts; and satin box, sycamore, olive, and pencil-wood, giving woods of beautiful grain for parquetry, veneers, carving, and picture frames. The sandalwood of Western Australia (*Santalum cygnorum*) is a very valuable forest product, its export having covered half-a-century.

§ 4. Forestal Industries and Production.

1. **Timber.**—The returns for quantity and value of timber cut and sawn, as given by the States Forestry Departments, are at present very incomplete. Owing to this fact the figures are, in some cases, necessarily merely estimates. It is proposed by the Commonwealth Bureau of Statistics to secure, if possible, more accurate information in future concerning this important industry.

QUANTITY OF LOCAL TIMBER SAWN OR HEWN IN EACH STATE OF THE COMMONWEALTH DURING THE YEARS 1901 TO 1906.

State.	1901.	1902.	1903.	1904.	1905.	1906.
	Sup. feet.	Sup. feet.	Sup. feet.	Sup. feet.	Sup. feet.	Sup. feet.
New South Wales	96,907,000	90,308,834	100,408,000	117,029,000	112,580,000	119,337,000
Victoria	46,495,885	40,494,660	38,841,322	49,250,000	47,635,358	51,103,000
Queensland	140,443,099	72,478,951	69,508,800	71,293,811	73,930,279	82,801,846
South Australia...	22,877	197,088	130,565	94,396	155,662	130,763
Western Australia	122,413,865	124,005,005	126,729,833	143,594,953	137,250,340	136,294,697
Tasmania	45,848,526	24,531,922	35,196,700	34,760,628	40,273,429	39,498,697
Commonwealth ...	452,131,252	352,016,460	370,815,220	416,022,788	411,825,068	429,166,003

The only States for which an annual return is furnished for the value of locally sawn or hewn timber are South Australia and Tasmania. The values for South Australia for the years 1901 to 1906 are respectively, £23; £154; £413; £400; £340; and £230. For Tasmania the values for the same years are respectively, £117,734; £62,578; £89,227; £92,102; £75,817; and £110,689. The estimate for Western Australia for the whole six years is £5,268,235; and for New South Wales for the same period. £4,050,000.

2. **Forest Produce.**—Estimates have been made of the total value of forest production, but these must be regarded as mere approximations. Many of the items are very difficult, and some impossible, to obtain. Large returns are credited to firewood, but these have been omitted altogether, since estimates are subject to a wide range of uncertainty.

The Forestry Department of New South Wales estimates that the production in the six years, 1901-6, averaged at least £685,000 per annum. For Victoria the Government Statist gives the following figures:—1904, £230,567; 1905, £206,725; 1906, £217,569. No figures on a similar basis are available for Queensland. The estimates for South Australia for 1901 to 1906 are £187; £354; £590; £665; £610; and £440. Western Australia averages for the six years, 1901-6, £984,264. Tasmania supplies the following estimates for the same years, viz., £152,102, £83,943, £114,227, £119,477, £94,987, £126,514.

§ 5. Oversea Trade.

1. **Imports.**—The value of timber imports for 1901 to 1906, and the quantity for 1903 to 1906, are as follows:—

IMPORTS OF DRESSED TIMBER, 1901 TO 1906.

Country whence Imported.	Quantity.				Value.					
	1903.	1904.	1905.	1906.	1901.	1902.	1903.	1904.	1905.	1906.
	Super. ft.	Super. ft.	Super. ft.	Super. ft.	£	£	£	£	£	£
United Kingdom	131,751	19,224	14,694	41,049	1,134	3,326	1,429	807	361	894
Canada	6,875	104,770	9,800	833	2,742	13,890	46	828	67	2
New Zealand ...	142,823	20,336	21,238	5,125	26,398	9,659	1,109	216	231	65
Other Brit. Pos....	1,034	49,322	3,549	5,437	236	243	16	1,258	36	51
Norway	17,642,379	41,901,583	33,084,662	43,712,732	323,937	289,740	122,416	312,067	228,306	273,546
Sweden	3,840,459	8,739,497	2,515,967	2,412,087	30,169	28,693	20,905	51,379	11,965	15,054
United States ...	2,998,450	3,516,661	2,411,998	1,727,363	56,114	49,641	26,919	28,073	23,181	19,968
Other For. Count.	...	104,934	89,868	304,596	935	650	...	523	696	1,764
Total ...	24,763,771	54,456,327	38,151,816	48,209,222	441,665	395,842	172,840	395,151	264,843	311,358

NOTE.—Quantity for 1901 and 1902 not available.

IMPORTS OF UNDRESSED TIMBER, 1901 TO 1906.

Country whence Imported.	Quantity.				Value.					
	1903.	1904.	1905.	1906.	1901.	1902.	1903.	1904.	1905.	1906.
	Super. ft.	Super. ft.	Super. ft.	Super. ft.	£	£	£	£	£	£
United Kingdom	48,246	38,677	335,782	293,086	2,181	7,083	535	720	2,869	2,531
Burmah ...	...	...	29,208	290,060	...	...	...	...	274	7,173
Canada	7,864,000	12,077,976	13,684,642	8,380,951	66,553	91,090	36,601	51,270	52,119	42,538
India	52,392	29,703	410,797	248,989	3,365	9,577	1,656	603	9,595	3,921
New Zealand ...	51,182,185	54,342,497	65,690,179	65,164,718	256,396	218,565	239,944	252,407	329,327	314,522
Straits Settlem'ts.	261,279	142,395	151,930	130,898	1,150	894	1,197	754	941	955
Other Brit. Pos....	100,827	20,926	17,832	8,580	148	770	362	139	671	175
Norway	4,167,679	2,450,009	1,872,950	1,284,969	5,187	34,767	32,860	16,039	11,957	6,987
Russia	810,400	3,600,067	1,647,700	285,900	...	6,722	5,589	27,204	11,568	1,810
Sweden	1,753,237	2,911,423	3,077,756	2,756,200	17,951	19,250	15,024	21,396	20,760	17,764
United States ...	85,761,549	117,478,797	76,814,855	121,601,462	363,320	314,783	398,139	503,442	308,479	549,534
Other For. Count.	85,279	1,115,766	242,870	1,122,591	1,297	1,250	615	2,505	1,726	5,462
Total ...	152,087,073	194,208,236	163,976,501	201,568,404	717,548	704,751	732,522	876,479	750,286	953,372

NOTE.—Quantity for 1901 and 1902 not available.

2. Exports.—The quantity and value of undressed (sawn) timber exported from 1903 to 1906 is given below, the countries of destination being also shewn. The quantities for 1901 and 1902 are not available, and the values only are given. Countries to which the produce was exported cannot, however, be stated for these years:—

VALUE OF EXPORTS OF UNDRESSED TIMBER (SAWN), 1901 AND 1902.

1901, £631,257 ; 1902, £544,830.

EXPORTS OF UNDRESSED TIMBER (SAWN), 1903 TO 1906.

Country to which Exported.	Quantity.				Value.			
	1903.	1904.	1905.	1906.	1903.	1904.	1905.	1906.
	Super. ft.	Super. ft.	Super. ft.	Super. ft.	£	£	£	£
United Kingdom ...	24,560,133	32,784,587	30,075,954	25,561,273	166,616	215,128	192,891	167,081
Canada	53,266	281,787	420,550	567,806	360	2,307	4,207	5,566
Cape Colony	27,145,821	12,586,852	15,243,863	4,455,719	190,008	78,247	102,886	23,855
Ceylon	1,408,050	2,693,624	1,764,952	25,285	9,387	17,816	6,179	213
Fiji	699,817	1,255,562	1,255,117	1,712,468	4.283	8.486	8,715	11,159
India	9,677,354	28,588,030	47,441,112	63,248,657	64,513	182,238	293,287	384,463
Mauritius	399,215	689,968	1,405,341	820,197	2,716	4,594	9,328	5,128
Natal	10,446,482	10,242,758	7,432,841	1,825,763	74,797	61,200	51,426	11,356
New Guinea	49,069	116,213	95,741	141,968	287	783	748	1,260
New Zealand ...	16,475,901	13,582,156	17,670,685	17,705,412	106,817	79,587	100,438	120,480
Ocean Island... ...	16,207	168,885	224,265	573,498	96	1,146	1,502	3,935
Straits Settlements	240,000	1,093,984	289,685	1,047,381	1,600	7,296	1,952	5,849
Other British Pos. ...	1,620,784	605,732	768,810	5,404	6,612	4,087	5,495	38
Argentine Republic	—	467,208	834,804	2,947,860	—	3,115	5,565	19,652
Belgium	145,700	100,659	89,756	509,177	975	975	537	3,913
China	31,626	66,406	8,221,486	12,335,396	211	413	54,816	81,673
Egypt	—	3,116,808	2,072,820	20,460	—	20,778	13,819	136
Germany	872,361	2,475,727	4,409,822	3,985,212	6,880	15,219	27,394	32,716
Japan	7,365	30,716	13,389	403,326	85	450	117	2,695
Kaiser Wilhelm's L.	93,016	106,112	77,046	29,818	596	730	535	195
Marshall Island ...	90,767	56,057	101,027	502,627	611	385	683	3,418
Netherlands	149,965	703,980	—	1,174,827	1,300	4,698	—	5,745
New Pommern ...	116,023	96,486	32,428	121,043	736	666	223	841
New Caledonia ...	495,610	134,616	152,569	136,383	3,264	850	883	843
Philippine Islands...	1,668,016	3,855,318	2,556,694	2.393,518	11,212	23,887	21,901	12,556
Portuguese E. Africa	21,721,764	10,274,694	10,413,067	3,261,837	144,811	61,966	68,786	18,636
South Sea Islands ...	299,103	219,649	251,277	415,071	2,049	1,480	1,710	2,760
United States of Am.	159.234	280,349	452,377	582,274	1,543	2,812	4,683	5,272
Uruguay	666,096	—	1,927,800	6,137,060	4,441	—	12,852	40,912
Other For. Countries	10,530	93,599	142,176	1,775,770	88	559	961	7,184
Total	119,319,275	126,768,522	155,837,454	154,422,490	806,894	801,893	994,519	979,530

The oversea trade in timber of all kinds is given in the next series of tables :—

QUANTITIES OF TIMBER IMPORTED AND EXPORTED INTO AND FROM THE COMMONWEALTH, 1901 TO 1906.

Description.	1901.	1902.	1903.	1904.	1905.	1906.
IMPORTS—						
Dressed ... Sup. feet.	*	*	24,763,771	54,456,327	38,151,816	48,209,222
Undressed... „	*	*	152,087,073	194,208,286	163,975,501	201,568,404
Doors ... No.	78,336	57,941	31,341	29,876	8,799	3,343
Other	*	*	*	*	*	*
EXPORTS—						
Dressed ... Sup. feet.	*	756,661	631,781	789,076	534,561	745,800
Undressed... „	*	*	119,319,275	126,768,522	155,837,454	154,422,490
Logs ... „	*	*	3,129,276	3,549,036	1,688,258	1,738,013
Palings ... No.	*	374,290	527,800	612,025	972,479	656,170
Other	*	*	*	*	*	*
EXCESS OF IMPORTS OVER EXPORTS—						
Dressed ... Sup. feet.	*	*	24,131,990	53,667,251	37,617,255	47,463,422
Undressed... „	*	*	32,767,798	67,439,714	8,139,047	47,145,914
Other	*	*	*	*	*	*

* Quantity not available.

VALUES OF TIMBER IMPORTED AND EXPORTED INTO AND FROM THE COMMONWEALTH, 1901 TO 1906.

Description.	1901.	1902.	1903.	1904.	1905.	1906.
IMPORTS—	£	£	£	£	£	£
Dressed ...	441,665	395,842	172,840	395,151	264,843	311,358
Undressed ...	717,548	704,751	732,522	876,479	750,286	953,372
Doors ...	28,856	29,530	13,912	12,414	3,197	1,373
Other ...	180,127	41,011	42,697	66,842	53,949	63,353
Total values...	1,368,196	1,171,134	961,971	1,350,886	1,072,275	1,329,456
EXPORTS—						
Dressed ...	9,356	6,301	5,635	6,366	5,353	6,886
Undressed ...	631,257	544,830	806,894	801,893	994,519	979,530
Logs	14,594	4,745	23,300	16,894	12,988	12,662
Palings ...	1,568	1,467	2,183	2,607	4,952	3,065
Other ...	10,177	7,606	10,243	8,457	9,791	9,968
Total values...	666,952	564,949	848,255	836,217	1,027,603	1,012,111
EXCESS OF IMPORTS OVER EXPORTS—						
Dressed ...	432,309	389,541	167,205	388,785	259,490	304,472
Undressed ...	86,291	159,921	— 74,372	74,586	—244,233	— 26,158
Other ...	182,644	53,723	20,883	51,298	29,415	39,031
Total values...	701,244	606,185	113,716	514,669	44,672	317,345

— Signifies excess of exports over imports.

The exports of sandalwood were :—

EXPORTS OF SANDALWOOD, 1901 TO 1906.

Country to which Exported.	Quantity.						Value.					
	1901.	1902.	1903.	1904.	1905.	1906.	1901.	1902.	1903.	1904.	1905.	1906.
	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.	£	£	£	£	£	£
Hong Kong	*	71,283	21,606	65,946	68,657	134,769	53,991	27,005	9,782	17,369	27,306	55,970
Straits Settlements ...	*	33,946	18,842	9,007	14,145	9,369	15,341	12,119	6,727	2,264	4,479	3,721
Other British Possessions	*	1,348	10	260	—	4,364	408	150	5	65	—	1,782
China	*	54,323	47,671	14,987	27,564	28,025	7,905	22,497	21,399	5,719	7,008	9,299
Other Foreign Countries	*	—	—	—	61	478	65	—	—	—	23	215
Total	*	160,900	88,129	90,200	110,427	177,005	77,710	61,771	37,913	25,417	38,816	70,987

* Quantity not available.

Tanning bark is largely exported from the Commonwealth, as the following table shews:—

EXPORTS OF TANNING BARK, 1901 TO 1906.

Country to which Exported.	Quantity.						Value.					
	1901.	1902.	1903.	1904.	1905.	1906.	1901.	1902.	1903.	1904.	1905.	1906.
	cwt.	cwt.	cwt.	cwt	cwt.	cwt.	£	£	£	£	£	£
United Kingdom ...	41,075	58,399	54,970	99,766	48,306	46,825	16,203	24,354	21,331	38,723	17,499	16,978
New Zealand ...	51,350	45,250	73,752	52,834	69,945	73,831	20,614	19,403	33,138	22,270	27,553	30,844
Other British Pos. ...	520	1,546	660	1,211	3,018	519	232	618	332	508	1,179	218
Belgium	3,560	...	...	4,898	14,902	6,864	1,510	...	...	2,032	5,667	2,695
France	5,300	1,211	3,874	3,325	728	1,879	2,825	512	1,927	1,553	270	676
Germany	16,980	20,784	8,562	88,802	368,200	301,219	6,979	9,626	3,955	28,432	135,321	110,754
Other For. Countries	369	3	776	1,152	5,179	759	151	4	330	409	2,210	288
Total	119,154	127,193	142,594	251,986	510,278	431,896	48,514	54,607	61,013	93,927	189,699	162,453

The import of bark was very small, and the net export is little below the gross export:—

QUANTITIES AND VALUES OF BARK IMPORTED AND EXPORTED INTO AND FROM THE COMMONWEALTH, 1901 TO 1906.

Particulars.	1901.	1902.	1903.	1904.	1905.	1906.
QUANTITIES—	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.
Imports	2,073	220	265	775	960	63
Exports	119,154	127,193	142,594	251,986	510,278	431,896
Excess of exports over imports	117,081	126,973	142,329	251,211	509,318	431,833
VALUES—	£	£	£	£	£	£
Imports	616	128	186	340	632	58
Exports	48,514	54,607	61,013	93,927	189,699	162,453
Excess of exports over imports	47,898	54,479	60,827	93,587	189,067	162,395

SECTION XI.

FISHERIES AND PISCICULTURE.

§ 1. Commercial Fisheries.

1. **Early Fishing Excursions of Malays.**—Economic fisheries in Australia date back to a period long before the exploration of the northern and north-western shores of the continent by Tasman and Dampier. The Malays of Macassar, in their proas, made fishing excursions amongst the reefs and shoals skirting the coast, collecting and curing trepang and bêche-de-mer, a practice continued up to the present time. They arrive ordinarily at the beginning of the north-west monsoon, and return to Macassar after a few weeks, as the south-east monsoon sets in. Besides the bêche-de-mer, the Malays barter rice, tobacco, and gaudy handkerchiefs for tortoise shells, pearl shell and seed pearls, collected by the aborigines.

2. **Fish Stocks.**—Australasia, extending from 10° to 45° south latitude, produces an abundant and varied fish fauna, embracing both tropical and temperate characters, including destructive, as well as edible species, and on its shores both crustaceans and amphibians. In the rivers and lakes, indigenous varieties thrive side by side with imported ones, introduced and acclimatised for industrial and sporting purposes by Governments and angling societies. Exploitation of aquarian products—for some classes of fish for the whole year, for others during the breeding season only, or until a certain size is attained—is expressly forbidden where necessary; areas are closed against net-fishing, and a minimum size of mesh for nets is sometimes fixed. Even where the State has not interfered, the sea-fishers in some districts have made regulations for the purpose of controlling the market supply, and these they rigorously observe.

3. **Economic Fisheries.**—Australia's food fishes, though abundant, have not led to the development of an industry of national importance, though fresh and salt water fisheries pay handsomely in other countries, and could no doubt do so in Australia. It has been authoritatively stated that "The collection and distribution of the knowledge of the world's work in fish-culture would make an acre of water more valuable than an acre of land, and the toilers of the sea could reap manifold their present harvest." This would involve also better arrangements for the distribution of fish than exist at present.

4. **Lake and River Fishing.**—Lake and river fishing take even lower industrial rank than marine fishing, though local catches furnish on the aggregate a not inconsiderable amount of food supply.

5. **Distribution of Supplies.**—The economic arrangements as to distribution impose at present serious difficulties on the development of fishing generally, since there is a wide divergence between the price paid by the consumer and the return received by the producer.

6. **Oyster Fisheries.**—Natural oyster beds, whose ample product is of excellent quality, exist in the shallow waters of inlets and estuaries of several parts of the Australian foreshore. By husbanding the natural crop, and by judicious transplanting, the oyster output has been very materially augmented. The areas are leased by the Government to private persons, lengths of foreshore being taken up and profitably exploited.

7. **Pearl-shelling.**—Pearl-shelling is carried on in the tropical districts of Queensland, South Australia (Northern Territory), and Western Australia. The pearl oyster inhabits the whole northern coast from Cape York to North-west Cape, a length of shore of 2000 miles. The aggregate value of the pearls taken is not large, it being estimated that upwards of 4000 shells may be opened without discovering a pearl worth £1; but the shells are marketed in considerable quantities, and the industry gives employment to many people, both directly and indirectly. A great number of those engaged in the raising of the produce are coloured, and consist of Japanese, Chinese, and Malays. The fishing is now generally conducted with the aid of diving apparatus, in water varying from four to twenty fathoms in depth. The inshore banks and shallower waters have been almost entirely worked out, and the deeper waters, from three to twenty miles off shore, are now being worked.

In tropical Queensland pearl-shell diving is actively pursued, and is by far the most important of the fishing industries, Torres Straits being the centre of production. With it the pursuit of bêche-de-mer is carried on, and tortoise-shell is obtained on the coasts. The industry is supervised by the Marine Department, which administers the Fisheries Acts. A statutory limit is fixed for the minimum size of shell that may be gathered. Experiments have been made in cultivating the pearl oyster on suitable banks. A small variety has been discovered at Stradbroke Island, in Moreton Bay, but the commercial value of the produce is small.

The discovery of mother-of-pearl shell in Port Darwin Harbour in 1884 caused a rush of pearling boats from Torres Straits. But the muddiness of the water, rendered almost opaque by the heavy tides, prevented the divers from satisfactorily working the area and led to an abandonment of the industry within three years from its birth. Prospecting in new patches has since been carried on and the industry has been revived. In addition to pearl and trepang fishing, dry-salted fish is also exported from the Territory.

In Western Australia the centres of the industry are Broome, Cossack, Onslow, and Shark Bay. There are two distinct species of mother-of-pearl shell exported. The principal trade is done in the large shells (*Meleagrina margaritifera*), limited in distribution to tropical waters and extending in habitat from Exmouth Gulf northwards. It is laid under contribution for the larger manufactured articles, such as dessert and fish knife and fork handles, large buttons, and inlaid work. The largest and finest pearls are obtained from it. The second species is that known commercially as the Shark Bay variety (*Meleagrina imbricata*). It is of smaller size and used chiefly for the manufacture of small buttons. The pearls found are of varying value. The Shark Bay pearl-shell is collected by dredging in the deeper waters and gathered by hand from off the shallow banks at low tide.

The system of licensing boats and men engaged in the pearling industry restricts. in the States where it is in force, indiscriminate exploiting of the areas, and returns a small revenue.

§ 2. Fisheries Statistics.

1. **Departmental Estimates.**—Statistics of the fishing industry have not hitherto been systematically collected. The returns given below have been furnished by the States departments, and estimates, where they have been made, are official. The data do not lend themselves to presentation on a uniform scheme, and are therefore given for the individual States.

2. **New South Wales.**—Much of the information can be regarded as approximate only. An estimate of the number of men employed gives an annual average of 1730, with 849 boats in use. The average annual quantity of fish marketed per year is 5,790,400 lbs., value £193,013.

GENERAL FISHERIES, NEW SOUTH WALES (EXCLUSIVE OF EDIBLE OYSTERS), 1901 TO 1906.

—		1901.	1902.	1903.	1904.	1905.	1906.
Total take of—							
Fish ...	... Baskets	90,618	118,823	141,280	125,290	123,222	128,854
Crayfish ...	... Dozen	2,161	4,148	4,436	2,757	7,104	4,916

FISHERMEN'S AND FISHING BOAT LICENSES, NEW SOUTH WALES, 1901 TO 1906.

Licenses.	1901.	1902.	1903.	1904.	1905.	1906.
Fishermen's	945	1,204	2,076	2,095	2,091	1,986
Fishing boat	441	518	1,043	1,019	1,061	1,047

REVENUE FROM FISHERIES, NEW SOUTH WALES, 1901 TO 1906.

Year.	From Licenses.	From Leases.	Fines and Forfeitures.	Oyster Spat.	Total.
	£	£	£	£	£
1901	791	3,567	148	*	4,514†
1902	950	3,987	103	*	5,040
1903	1,080	4,248	32	72	5,432
1904	1,010	4,646	193	231	6,080
1905	1,037	4,587	130	75	5,829
1906	1,043	4,796	58	234	6,131

* No oyster spat was sold until 1903. † Includes £8 from other sources.

EDIBLE OYSTER FISHERIES, NEW SOUTH WALES, 1901 TO 1906.

Year.	Number of Leases Granted.	Areas under Lease for Oyster Culture.		Oysters taken.	
		Deepwater.	Foreshore.	Quantity.	Value.
		Acres.	Yards.	Bags.	£
1901 ...	239	6¼	341,644	18,473	27,709
1902 ...	202	6¼	382,069	16,157	24,235
1903 ...	121	6¼	391,942	13,593	20,389
1904 ...	219	...	435,550	12,613	19,000
1905 ...	123	27	404,064	13,858	20,787
1906 ...	155	64	467,592	15,006	22,509

A considerable proportion of the foreshores and shallow areas of the river estuaries are excellent natural oyster-beds, and with constant attention to these beds the annual yield of oysters could no doubt be materially increased. As the table shews, it was less in the years 1903 to 1906 than it had been in the two preceding years.

3. **Victoria.**—Licenses to net in certain waters are issued without fee. Leases have been granted for oyster fisheries, but the return is insignificant. No separate revenue is credited to fisheries, the small amount derived by way of fines being credited to general revenue.

GENERAL FISHERIES (EXCLUDING EDIBLE OYSTERS), VICTORIA, 1901 TO 1906.

Year.	No. of Boats Engaged.	Value of Boats and Equipment.	No. of Men Employed.	Total Take of		Value of Take.	
				Fish.	Crayfish.	Fish.	Crayfish.
	No.	£	No.	cwt.	doz.	£	£
1901	622	28,094	982	72,517	19,003	45,017	6,269
1902	668	32,780	1,038	111,579	19,359	68,194	6,381
1903	651	33,163	1,084	116,750	18,823	70,252	6,258
1904	654	34,610	1,089	113,650	20,560	67,009	8,014
1905	660	34,600	1,039	96,000	19,662	58,230	7,496
1906	693	33,789	1,120	91,700	20,517	55,640	8,720

FISHERMEN'S AND FISHING BOAT LICENSES, VICTORIA, 1901 TO 1906.

Licenses.	1901.	1902.	1903.	1904.	1905.	1906.
Fishermen's	46	38	175	185	67	39
Fishing boat	19	22	42	40	36	38

EDIBLE OYSTER FISHERIES, VICTORIA, 1901 TO 1906.

Year	1901.	1902.	1903.	1904.	1905.	1906.
Number of leases granted ...	5	5	4	4	2	Nil
Length of foreshore in leases ft.	86,610	39,480	7,800	7,200	3,000	...

4. **Queensland.**—No account is kept of the value of boats and equipment, but an estimate, believed to be a very close approximation, has been furnished. An estimate which has been furnished of the total take of fish, gives 1450 tons as the annual average for the years 1901 to 1906, corresponding to an average annual value of £20,300. There are no lobster fisheries. The amount put up in the fish-preserving establishments is not great, but the demand for fish locally tinned is growing. The quantities and values of oysters from 1901 to 1904 given are those exported. Since the latter year the information has not been recorded, and no records are kept of those placed on the local market. The length of foreshore under lease cannot be accurately given. The deep water in Moreton Bay and Sandy Strait is leased as dredge sections, which extend across the channels to the islands, and contain from 100 to 1000 acres each. Within these sections the majority of the oyster banks (ground containing up to 30 acres lying within two feet below low-water mark) are situated on the foreshores of the islands, and on the mud and sand flats

GENERAL FISHERIES (EXCLUDING EDIBLE OYSTER AND PEARL-SHELL), QUEENSLAND, 1901 TO 1906.

Year	1901.	1902.	1903.	1904.	1905.	1906.
Number of boats engaged	240	313	326	245	272	251
Value of boats and equipments £	5,850	8,240	8,700	7,357	7,600	6,795
Number of Men Employed	496	602	602	498	511	446

REVENUE FROM FISHERMEN'S BOAT LICENSES, QUEENSLAND, 1901 TO 1906.

Licenses.		1901.	1902.	1903.	1904.	1905.	1906.
Fishermen's	£	248	301	301	249	256	223
Fishing boat	£	240	313	326	245	272	251

REVENUE FROM FISHERIES, QUEENSLAND, 1901 TO 1906.

Year		1901.	1902.	1903.	1904.	1905.	1906.
From licenses	£	488	614	627	494	528	474
Fines and forfeitures ...	£	...	15	...	2	...	11
Other sources	£	100	104	115	110	127	100
Total	£	588	733	742	606	655	585

EDIBLE OYSTER FISHERIES, QUEENSLAND, 1901 TO 1906.

Year.	Number of Boats Engaged.	Value of Boats and Equipment.	Number of Men Employed.	Number of Leases Granted.	Oysters Exported.	
					Quantity.	Value.
		£			Cwt.	£
1901... ...	83	4,510	127	575	21,658	14,370
1902... ...	118	4,645	189	679	20,682	16,120
1903... ...	132	4,800	172	635	19,482	15,887
1904... ...	109	5,215	171	652	23,900	20,073
1905... ...	130	5,075	200	675	*	*
1906... ...	144	7,025	200	714	*	*

* Information not recorded.

PEARL-SHELL AND BECHE-DE-MER FISHERIES, QUEENSLAND, 1901 TO 1906.

Year.	Number of Boats Engaged.	Value of Boats and Equipment.	Number of Men Employed.	Pearl-shell.		Bêche-de-mer.		Tortoise-shell.	
				Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
		£		Tons.	£	Tons.	£	lbs.	£
1901 ...	359	99,300	2,188	924	105,403	52	7,399	5,579	1,935
1902 ...	343	82,800	2,187	961	129,267	71	9,444	3,608	1,521
1903 ...	354	93,300	2,308	970	165,551	59	7,270	2,801	1,326
1904 ...	378	105,900	2,509	798	108,130	45	5,865	2,209	1,027
1905 ...	366	104,400	1,321	543	62,736	105	10,624	2,413	1,320
1906 ...	211	63,300	1,314	444	47,423	131	13,938	3,659	2,007

No record has been taken of the value of pearls obtained, and it is impossible to estimate it.

5. **South Australia and Northern Territory.**—There are no records of the number and value of boats, number of men employed, and take and value of fish. The Act imposing licenses was passed in 1904. In 1905, 600 fishermen's licenses were issued, and 686 in the following year. The revenue from general fisheries was £552 in 1905, made up of £551 from licenses and £1 fine; and £330 in 1906, £267 being from licenses and £63 fines and forfeitures. There are no fish-preserving establishments in South Australia.

From oyster fisheries the revenue in the years 1901, 1902, 1903, and 1904 was only £6 altogether, derived from leases. In 1905 it was £19, all from licenses; and in 1906 £17 from the same source. The figures for edible oyster fisheries, as completely as they can be furnished, are:—

EDIBLE OYSTER FISHERIES, SOUTH AUSTRALIA, 1901 TO 1906.

Year.	Number of Boats Engaged.	Value of Boats and Equipment.	Number of Men Employed.	Number of Leases Granted.	Length of Foreshore in Leases.
		£			Feet.
1901	...	...	...	1	100 x 50
1902	...	...	...	1	100 x 50
1903	...	...	...	1	100 x 50
1904	5	550	6	1	100 x 50
1905	7	720	8	1	100 x 50
1906	6	620	8	1	100 x 50

FISHING INDUSTRY, NORTHERN TERRITORY, 1901 TO 1904.

Year.	No. of Pearling Boats Engaged.	Value of Pearls Taken.	Pearl-shell.		Tortoise-shell.		Dried Fish.		Bêche-de-mer.	
			Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
		£	Tons.	£	lbs.	£	lbs.	£	Tons.	£
1901	44	2,000	141	17,168	80	50	28,336	342	64	2,628
1902	50	956	138	20,497	...	...	32,144	422	121	6,110
1903	50	1,183	126	28,391	...	...	40,096	581	105	3,870
1904	49	1,000	133	18,526	...	...	29,680	428	44	1,865

6. **Western Australia.**—In Western Australia the fishing industry has attained considerable importance, as will be seen from the tabular statements below:—

GENERAL FISHERIES (EXCLUDING EDIBLE OYSTER AND PEARL-SHELL). WESTERN AUSTRALIA, 1901 TO 1906.

Year.	Number of Boats Engaged.	Value of Boats and Equipment.	Number of Men Employed.	Total Take of		Value of Take.	
				Fish.	Lobsters.	Fish.	Lobsters.
		£		Tons.	Doz.	£	£
1901	218	8,000	400	1,300	6,610	39,000	1,983
1902	205	8,400	453	1,500	6,900	45,000	2,070
1903	250	10,400	590	1,500	6,990	45,000	2,097
1904	251	11,000	605	1,700	7,500	46,000	2,250
1905	249	11,300	545	1,351	7,000	40,530	2,000
1906	237	12,000	504	1,316	7,000	39,480	2,100

FISHERMEN'S AND FISHING BOAT LICENSES, WESTERN AUSTRALIA, 1901 TO 1906.

Licenses.	1901.	1902.	1903.	1904.	1905.	1906.
Fishermen's	400	453	590	605	545	504
Fishing boat	218	205	250	251	249	237

REVENUE FROM FISHERIES, WESTERN AUSTRALIA, 1901 TO 1906.

Year.	From Licenses.	From Leases.	Fines and Forfeitures.	Total.
	£	£	£	£
1901	870	187	13	1,070
1902	920	200	20	1,140
1903	943	231	25	1,199
1904	951	443	42	1,436
1905	927	195	24	1,146
1906	1,000	375	250*	1,625

* In 1906, 3000 yards of net were forfeited.

PEARL AND PEARL-SHELL FISHERIES, WESTERN AUSTRALIA, 1901 TO 1906.

Year.	Vessels.		Labour.									Quantity of Pearl-shell.	Value of Pearls.	Value of Pearl-shell.	Value of Bêche-de-mer
					Asiatic.										
	Number.	Tonnage.	White.	Aboriginal.	Chinese.	Japanese.	Malay.	Manilla.	Others.	Total Asiatic.	Total Labour.				
												Tons.	£	£	£
1901 ...	232	3,330	132	65	11	280	699	307	61	1,358	1,555	832	30,637	95,568	120
1902 ...	267	3,753	154	75	12	362	787	294	72	1,527	1,756	970	45,080	142,615	162
†1903 ...	337	5,083	193	59	15	665	1,031	283	71	2,065	2,317	996	42,648	128,589	...
†1904 ...	403	5,737	217	78	12	812	1,235	286	60	2,405	2,700	1,340	41,140	129,099	...
†1905 ...	323	4,441	167	69	8	616	1,082	232	54	1,992	2,228	1,155	41,685	119,786	1,045
1906 ...	368	5,118	181	95	16	815	1,021	211	116	2,179	2,455	1,246	59,349	132,065	547

† Incomplete.

7. **Tasmania.**—There are no licenses charged against fishermen or fishing vessels. and consequently no records are kept regarding their numbers or value of equipment. The estimated number of boats engaged in the industry is eighty-one, average crew two men, average value per boat £70. The license revenue is almost entirely obtained for rights to angle for salmon and trout with rod and line. Oyster fisheries are not worked. except in a most primitive way.

REVENUE FROM FISHERIES, TASMANIA, 1901 TO 1906.

Year.	From Licenses.	Fines and Forfeitures.	Other Sources.	Total.
	£	£	£	£
1901	569	8	75	652
1902	598	4	18	620
1903	715	14	4	733
1904	665	21	...	686
1905	607	7	...	614
1906	595	1	...	596

§ 3. Oversea Trade.

That the development of the fishing industry in Australia leaves much to be desired is evident from the fact that the import of preserved fish into the Commonwealth i large, the export inconsiderable. The figures for the trade are as follow:—

IMPORTS OF FISH, COMMONWEALTH, 1901 TO 1906.

Classification.		1901.[1]	1902.[1]	1903.	1904.	1905.	1906.
Fresh (oysters)	cwt.	...	...	7,269	9,468	8,195	9,225
" " ...	£	3,185	4,264	3,526	4,309	3,564	4,075
Fresh, smoked, or preserved by cold process	cwt.	...	...	8,391	8,403	11,386	9,591
" " "	£	6,639	6,282	14,759	12,060	16,507	14,632
Potted ...	cwt.	...	...	...	...	...	...
" ...	£	3,434	3,765	12,898	9,747	8,508	11,934
Preserved in tins				118,602	106,007	120,213	135,872
" " "	cwt.	135,300	132,526	272,572	249,054	288,371	310,656
N.E.I.[2] ...	£	320,725	293,463	20,913	15,736	16,992	17,336
" ...				30,905	24,662	27,898	29,729
Total ...	cwt.[3]	135,300	132,526	155,175	139,614	156,786	172,024
" ...	£	333,983	307,774	334,660	299,832	344,848	371,026

1. Quantities for 1901 and 1902 are not available for the first three items. 2. Denotes not elsewhere included in the tariff list. 3. Exclusive of first three items for 1901 and 1902, and of potted fish for 1903 to 1906.

The countries of origin of the last two items are shewn in the following table:—

IMPORTS OF PRESERVED FISH, COMMONWEALTH, 1901 TO 1906.

Country whence Imported.		1901.	1902.	1903.	1904.	1905.	1906.
United Kingdom ...	cwt.	67,203	74,619	86,174	70,888	54,852	69,453
" " ...	£	158,008	161,741	173,836	138,534	105,155	131,023
Canada	cwt.	6,709	4,791	5,728	8,564	20,665	15,861
"	£	15,259	10,746	12,470	23,148	54,132	39,455
Hongkong	cwt.	1,764	2,034	1,743	4,261	3,833	3,244
"	£	5,497	6,213	5,428	11,235	10,614	8,438
New Guinea... ...	cwt.	1,336	2,821	2,273	942	...	1,004
"	£	4,772	4,659	3,988	2,311	...	2,000
New Zealand ...	cwt.	1,250	1,282	1,295	942	1,439	1,239
"	£	3,496	4,821	4,082	4,643	7,439	4,517
Other British Possessions	cwt.	888	359	229	257	290	209
" "	£	2,568	1,126	702	701	639	618
Belgium	cwt.	258	265	209	495	576	1,247
"	£	1,066	1,007	954	1,434	2,130	3,693
China	cwt.	900	1,123	1,524	1,111	641	396
"	£	3,747	2,932	2,995	2,772	1,196	1,365
France	cwt.	772	1,541	4,901	312	940	542
"	£	4,212	5,394	19,707	1,538	3,632	2,014
Germany	cwt.	1,130	1,113	2,652	1,748	2,333	3,945
"	£	4,564	3,919	6,174	6,052	7,527	13,234
Japan	cwt.	185	114	485	881	110	248
"	£	728	261	1,074	2,282	265	574
Netherlands... ...	cwt.	...	...	25	36	166	617
"	£	...	...	31	65	727	2,492
Norway	cwt.	364	1,259	1,011	1,034	1,571	2,267
"	£	1,507	2,379	3,397	4,130	6,635	9,941
Portugal	cwt.	318	208	1,933	1,172	1.701	5,972
"	£	1,520	632	6,167	3,582	5,774	15,896
United States ...	cwt.	51,859	39,625	28,851	28,999	47,754	46,559
" " ...	£	112,551	85,607	60,819	70,987	109,485	104,013
Other Foreign Countries	cwt.	353	1,372	482	101	334	405
" "	£	1,230	2,026	1,653	302	919	1,112
Total Quantity ...	cwt.	135.299	132,526	139,515	121,743	137,205	152,208
Total Value ...	£	320,725	293,463	303,477	273,716	316,269	340,385

EXPORTS OF FISH, 1901 TO 1906.

Article.		1901.[1]	1902.[1]	1903.	1904.	1905.	1906.
Fish, smoked, or preserved by cold process	cwt.	...	...	70	35	416	264
	£	376	957	117	48	641	468
N.E.I.[2]	cwt.	...	...	2,127	2,713	6,234	6,128
„	£	13,216	19,172	15,413	12,485	23,145	24,589
Total	cwt.	...	...	2,197	2,748	6,650	6,392
	£	13,592	20,129	15,530	12,533	23,786	25,057

1. Quantities for 1901 and 1902 are not available. 2. See note on page 393.

EXPORTS OF PEARL-SHELL, 1901 TO 1906.

Country to which Exported.		1901.	1902.	1903.	1904.	1905.	1906.
United Kingdom ...	cwt.	29,977	40,273	40,955	40,634	46,462	35,890
„ „ ...	£	183,069	278,805	365,488	243,025	252,373	216,798
Hong Kong	cwt.	3,645	2	76	208	1	1
„	£	20,440	6	151	594	15	3
Other British Possessions	cwt.	42	...	...	6	...	...
„ „	£	276	...	...	65	...	...
Germany	cwt.	429	131	115	74	15	22
„	£	872	412	1,050	672	77	185
United States of America	cwt.	28	1,793	701	...	...	768
„ „	£	160	14,053	5,802	...	...	4,487
Other Foreign Countries	cwt.	581	878	503	1,436	1,176	836
„ „	£	1,141	1,171	175	566	459	383
Total	cwt.	34,702	43,077	42,350	42,358	47,654	37,517
	£	205,958	294,447	372,666	244,922	252,924	221,856

§ 4. Development of the Industry.

1. **Transport and Marketing.**—The large importations of fish into the Commonwealth indicate the scope for the development of the local fishing industry. Where quick transport by rail or steamer is not provided, the catch of fish in tropical or subtropical waters could only be locally consumed, since speedy marketing is essential. Adequate refrigerating apparatus on railway waggons and coasting steamers, and quick transport to centres of population might, however, alter the economic condition in a satisfactory direction. At the present time the natural wealth of Australia in fish is exploited only to a very slight extent.

2. **Experiment and Culture.**—(i.) *Trawling.* In many respects the fishing industry is capable of modification and development. A good deal has been effected by the States Governments in the way of experiment and culture, but much yet remains to be done before the industry is at all commensurate with the industrial development and consuming capacities of the Commonwealth. The Federal Government has taken in hand the conduct of trawling experiments. The existing fishing is inshore, the supplies being obtained from the vicinity of river estuaries and lakes. Deep-sea fishing, as established and carried on in older countries, is, so far, practically non-existent for Australia.

(ii.) *New South Wales.* In New South Wales, trawling experiments have shewn that considerable areas along the coast are suitable, but practical work on commercial lines is yet undeveloped. The stocking of rivers and lakes was begun by private enterprise, since which, Government aid has been granted, and eminent success has been attained among other fish with the Californian rainbow trout. Young fry are distributed annually from the trout hatchery at Prospect, and the natural reproduction of the fish in the streams that issue from the mountain ranges is regarded as a valuable asset. In 1902 attempts were successfully made to transport European fishes alive to Australia. A marine hatchery and biological station has been completed at Gunnamatta Bay, Port Hacking, by means of which it is proposed to gradually acclimatise suitable fishes. The natural oyster beds are also being extended.

(iii.) *Victoria.* In Victoria very little has been done in the way of hatcheries and culture, and that little has been mainly the work of private individuals and angling clubs. Trawling experiments were conducted some years ago, but the results were inconclusive.

(iv.) *Queensland.* In Queensland artificial hatching was undertaken by the Acclimatisation Society of Southern Queensland. Here, also, the American rainbow trout has succeeded, fry being distributed from the hatchery at Spring Creek, Killarney. The lung-fish, formerly known only in two streams, has been successfully transplanted to several other streams. Oyster beds are also being developed in several parts, and improved methods of culture have largely increased the output. The trawling experiments of 1901 and 1902 point to the improbability of a great trawling industry being established. The trawling area off Queensland would be a mere strip, because of the presence of the coral region immediately to the north and the fact that the sea deepens very rapidly to the east.

(v.) *South Australia.* In South Australia the indiscriminate exploitation of the Port Lincoln and adjacent oyster beds led to the necessity for their being closed from time to time to prevent the district from being altogether worked out. The future outlook has in this way been improved as regards oyster culture.

(vi.) *Western Australia.* In Western Australia the coastal waters have been examined to ascertain whether suitable trawling grounds exist. The Acclimatisation Committee has successfully hatched and liberated trout, the Mundaring weir being stocked with the Loch Leven variety. Perch were stocked in the lakes near Wanneroo Caves.

(vii.) *Tasmania.* Considerable distributions of ova and fry are annually made from the River Plenty in Tasmania. Besides the supplies to Tasmanian waters, the northern States are also recipients of ova: The figures for the five years 1900-1 to 1904-5 are:—

DISTRIBUTION OF OVA AND FRY FROM THE BREEDING PONDS, RIVER PLENTY, 1900-1 TO 1904-5.

FRY (LOCH LEVEN, RAINBOW, BROWN, AND SALMON TROUT), 1900-1 TO 1904-5.

—	1900-1.	1901-2.	1902-3.	1903-4.	1904-5.
Liberated in northern rivers...	84,500	371,000	15,500	82,521	276,250
„ southern „ ...	97,000	300,000	20,500	59,305	258,500
„ inland lakes ...	6,000	134,500	5,000	8,000	...
Total	187,500	805,500	41,000	149,826	534,750

In 1900-1, 43,000 trout ova were forwarded to Victoria, 4500 to Queensland, and 63,300 to New South Wales. In 1901-2, 100,000 trout ova were forwarded to Victoria and 50,000 to New South Wales. In 1902-3, 10,000, and in 1903-4, 23,000, ova of brown trout were forwarded to Victoria.

§ 5. Fish Preserving.

The Australian climate, especially in the north, renders the industry of fish preserving difficult, and little development has taken place. Bounties have been provided by the Federal Government for fish preserving. These, together with the augmented harvest that may be expected as a result from the trawling operations shortly to be instituted, will probably lead to a considerable output and consumption of locally preserved fish. The establishments for fish preserving at the present time are very few:—

NUMBER OF FISH PRESERVING ESTABLISHMENTS, 1901 TO 1906.

State.	1901.	1902.	1903.	1904.	1905.	1906.
New South Wales ...	3	3	2	2	2	2
Victoria	...	...	...	...	...	...
Queensland	3	3	4	4	4	4
South Australia ...	...	...	...	...	...	...
Western Australia ...	2	2	2	3	3	3
Tasmania	...	...	...	1	1	...
Australia	8	8	8	10	10	9

SECTION XII.

MINES AND MINING.

§ 1. Introduction.

1. **Place of Mining in Australian Development.**—Although Australia is pre-eminently a pastoral and agricultural country, the value of the production from its flocks and herds and from its farming industry far exceeding the return from mining, yet its mines and its mining developments are of great and increasing importance. It may also be said that it was the discovery of its immense stores of mineral wealth that first attracted population to Australia, and thus laid the foundations of its nationhood. Though coal was the first discovered mineral of recent times, it was the discovery of gold, overshadowing in popular estimation the former, which brought about a large influx of population and the formation of various settlements.

That Australia was a gold-producing country was known probably 400 years ago. From the Dauphin chart (1530-1536) preserved in the British Museum, it appears that the north-west coast was called by the Portuguese and Spaniards *Costa d'Ouro*, gold-coast. But the knowledge of Australia as a gold-producing territory was not revived until as late as 1823, when James McBrien, making a survey of the Fish River, between Rydal and Bathurst, in New South Wales, wrote in his field notes—"At this place I found numerous particles of gold in the sand." Reference to subsequent discoveries will be reserved till later.

2. **Extent of Mineral Wealth.**—The large production of gold, silver, copper, and tin, the extent of the coal deposits, the presence of large quantities of iron ore, and the great variety of minerals found in appreciable quantities, suggest that the future history of mining will, in all probability, be more remarkable even than that of the past. For the extent of the total mineral wealth of Australia cannot yet be regarded as well-ascertained, since the mineral exploration of this country is, after all, still in its infancy. The presence of considerable deposits of valuable metals has long been known. Thus, silver was discovered by Count Strzelecki as early as 1839, and was worked as early as 1864; copper mining dates back to 1844; lead to about 1848, and iron to about 1850. Cobalt, nickel, manganese, chromium, tungsten, molybdenum, mercury, antimony, bismuth, zinc, etc., have all been found, some in fairly large quantities.

Among the more valuable non-metalliferous substances may be mentioned coke, kerosene shale, graphite, alunite, asbestos, diatomaceous earth, clays, ochres, etc.; in building stones, sandstones, syenites, granites, basalts, augite-andesite, porphyries, serpentines, slates, limestones, and marbles; in precious stones, diamonds, emeralds, rubies, sapphires, amethysts, precious opal, turquoise, topazes, garnets, chrysolites, cairngorm, agates, etc. In general it may be said that the variety of Australian mineral wealth is very great.

It will be convenient in the succeeding pages to treat first of all gold and the various metals, then to deal with non-metallic minerals and precious stones, and finally to furnish some account of the total mineral wealth of Australia, and of the extent of employment in mining generally.

METALS (A.)

§ 2. Gold.

1. **Discovery of Gold in Various States.**—The discovery of gold in payable quantities was an epoch-making event in Australian history, for as one writer aptly phrases it, this event "precipitated Australia into nationhood." A reference to the population figures prior and subsequent to the year 1851 amply demonstrates this fact. Thus on 31st December 1841 the population of the Commonwealth was only 220,968[1]; at the end of 1851 it was still under half a million, viz., 437,665[1], while by the end of 1861 the total had reached 1,168,149[1] persons, that is the population had quintupled itself in twenty years. A short account of the chief discoveries in each State and in New Zealand is appended:—

(i.) *New South Wales.* The first authentic discovery of the precious metal in this State was made by "Assistant Surveyor" James McBrien, on the 16th February, 1823. Mr. McBrien reported that he had "found numerous particles of gold amongst the sand in the hills convenient to the Fish River," the locality to which he alludes in his field-book being not far from the scene of Hargraves' memorable discovery twenty-eight years later. The famous Polish explorer, Count Strzelecki, reported the existence of gold, in the form of auriferous pyrites, in the Vale of Clwydd, near Lithgow, in 1839, but Governor Gipps, to whom he had imparted his discovery, requested him to keep the matter secret, being fearful of the effect that such news might have on the discipline of the infant settlement. The Rev. W. B. Clarke, who, in 1841, discovered gold on the Cox River, and on the Wollondilly in 1842, expressed the belief that a large portion of the newly occupied country would prove auriferous. This opinion was shared by several eminent authorities in England, including Sir Roderick Murchison, and the validity of it was in the first instance amply demonstrated by Hargraves' world-renowned discovery in 1851. Hargraves, who had gained his experience on the goldfields of California, found payable deposits of alluvial gold at Lewis Ponds and Summer Hill Creek, and on the Macquarie River. The news of these discoveries, amplified and distorted by all sorts of rumours, soon caused an enormous influx of people into Australia. The dates of other important finds were as follows:—Rich alluvial leads at Forbes in 1862, Rocky River, near Uralla, 1856, in beach sands at northern rivers, 1870, Gulgong 1871, Mount Drysdale 1892, Wyalong 1893.

(ii.) *Victoria.* The discovery of gold in the mother colony was quickly followed by discoveries on a larger and more important scale in the neighbouring colony of Victoria. According to the report of the Select Committee of the Legislative Council appointed to inquire into the claims of candidates for the rewards offered, the discoveries took place in the following sequence. The Hon. W. Campbell discovered the precious metal in March, 1850, at Clunes, but concealed the fact temporarily through fear lest the announcement should prove injurious to the squatter on whose run the discovery was made, and the gold-discovery committee was not notified until the 8th July, 1851. On the 5th July, 1851, notification was made of the discovery of gold in the Yarra Ranges by Mr. L. J. Nichel. Mr. James Esmond discovered gold in quartz at the Pyrenees Mountains, the notification being made on the 5th July, and soon after the numerous fields near Mount Alexander were opened up. The chief centres of the gold-mining industry at the present time are in the Bendigo, Ballarat, Beechworth, Castlemaine, Maryborough, Ararat, and Stawell districts. In November, 1906, a remarkable discovery of gold was made near Tarnagulla, where a miner who had prospected the district for years obtained seven ounces of gold from a shaft nineteen feet deep, and some fairly large nuggets being found soon after, the so-called Poseidon rush set in. Several of the nuggets were unearthed within a few inches of the surface. The largest weighed 953 ounces and two others weighed 703 and 675 ounces respectively.

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[1] Figures for these years were given in "A Statistical Account of Australia and New Zealand for 1903-4" as 206,095; 403,889; 1,153,973 respectively, but those refer presumably to the enumerations in the earlier part of the years mentioned.

(iii.) *Queensland.* The news of the discoveries in the southern divisions of the continent fired the minds of the few remaining settlers in Queensland, which at this time was still a portion of New South Wales, with the hope that an El Dorado would be discovered in the north. It was not, however, until the year 1858 that payable gold was struck at Canoona by a party under the leadership of Mr. W. C. Capel. Almost immediately a rush set in from all parts of Australia and also from New Zealand—a rush that was attended with disastrous consequences to many that participated in it, for the alluvial deposits were soon worked out, and many of those who reached the diggings suffered great privations through lack of the ordinary necessaries of life. In 1863 gold was found at Canal Creek and Gladstone, Crocodile Creek field was discovered in 1865, Ridgelands in 1867, followed shortly afterwards by Rosewood and Gympie, Townsville was opened up in the following year, and the Gilbert River fields in 1869. The Palmer goldfield dates from 1873, while the celebrated Mount Morgan was first worked in 1882, and Croydon in 1884.

(iv.) *South Australia.* It is believed that a German mineralogist named Menge was the first to find gold in South Australia, but the record lacks complete authenticity. In January, 1846, the Victorian Gold Mine, in the neighbourhood of Montacute, was opened by a company, but its career was short, and there is no record of its production. It is reported that the cost of producing a single ounce was as much as £10. The Echunga field was opened in 1852, but the production therefrom in the earlier years of its existence was quite insignificant. At the present time there are 120 ordinary and 40 gold-dredging leases in the State, but, compared with that of the other States, the total yield is small. In the Northern Territory gold was discovered in 1869 by Mr. Burton, of Goyder's survey party. Messrs. McLachlan and Masson, in 1870, found gold at a locality about thirty-five miles east of Pine Creek, and in the following year the same prospectors obtained five-and-a-quarter ounces near the terminus of the northern section of the trans-continental railway. In 1872 a prospecting party found rich auriferous reefs near Yam Creek, about 115 miles from Palmerston. The records of finds in the Northern Territory are in general, however, somewhat indefinite. In recent years the chief find has been at Tarcoola, in the north-western district, discovered in 1893 but developed to a slight extent only before 1900. A rich find was reported at Arltunga in 1902, but the field has since given only small returns.

(v.) *Western Australia.* The discovery of gold in Western Australia took place at a much later date than in the eastern States; nevertheless the present production far exceeds in value that of any other portion of the continent. It appears that the precious metal was first detected in 1848, in specimens sent for assay to Adelaide from the Murchison copper and lead deposits. In 1852-53 rich specimens of gold-bearing stone were found by shepherds and others in the eastern districts, but they were unable afterwards to locate the places where the stone was discovered. The late Hon. A. C. Gregory found traces of gold in quartz at the Bowes River in 1854. In 1861 Mr. Panton found gold near Northam, while shortly afterwards a shepherd brought in rich specimens of auriferous quartz which he had found to the eastward of Northam, but he failed to locate the spot again. Various small finds were made up to 1882, when Mr. A. McRae, riding from Cossack to Roeburne, picked up a nugget weighing fourteen ounces. In 1885 Messrs. Hall, Slattery, and others found gold on the Elvire, Margaret, and Ord Rivers. The Kimberley goldfield was opened in May, 1886. Next year the precious metal was discovered at Yilgarn, and the field was proclaimed in 1888, in which year rich finds were also made at Mallina and Pilbara Creek, the Pilbara field being proclaimed in October. The Ashburton field was proclaimed in 1890, and the Murchison in 1891. From the cap of a reef on the Yalgoo field, proclaimed in 1890, gold to the value of £15,000 was obtained in a very short time by the simple process known as "dollying." In 1892 Bayley and Ford discovered the Coolgardie field, obtaining over 500 ozs. of gold in one afternoon by the aid of a tomahawk. Alluvial was discovered by Frost and party at Goongarrie (the ninety-mile) in May, 1893. Kalgoorlie (Hannan's) was discovered in June of the same year by Messrs. Flannigan and Hannan, Bardoc in August by Messrs. Cashman and Lee, Siberia by Frost and Bonner in October. There were numerous rich discoveries in 1894, such as at "Mount Jackson," "the Pinnacles," "Billy Billy," and at the celebrated Kanowna diggings. Rich finds were also made at Bulong, Londonderry, and the Wealth of Nations, Mr. J. G. Dunn, the discoverer of the latter, obtaining £20,000 of gold in a few days. The "Norseman" was discovered in July by Mr. L. Sinclair, as also the "Lady Shenton" at Menzies. The "Niagara" was discovered in January, 1895, also the rich field known as the "Hands Across the Sea," at Kunanalling. "Blackboy Hill" field was proclaimed in 1897, "Donnybrook" in 1898, while there were further rich finds in 1899.

(vi.) *Tasmania.* The first discovery of the precious metal in the island State is reported to have been made by a Mr. Riva, of Launceston, who is stated to have traced gold in slate rocks in the vicinity of Nine Mile Springs in 1849. A valuable discovery was made in 1852 at the Nook, near Fingal, and further small finds were reported during the same year from Tower Hill Creek and the vicinity of Nine Mile Springs (Lefroy). During 1859 the first quartz mine started operations at Fingal. In the same year James Smith found gold at the River Forth, and Mr. Peter Leete at the Calder, a tributary of the Inglis. Reef gold was discovered in 1869 at Nine Mile Springs (Lefroy) by Mr. S. Richards. The first recorded returns from the Mangana goldfields date from 1870: Waterhouse, 1871; Hellyer, Denison, and Brandy Creek, 1872; Lisle, 1878; Gladstone and Cam, 1881; Minnow and River Forth, 1882; Branxholme and Mount Victoria, 1883; and Mount Lyell, 1886.

(vii.) *New Zealand.* Gold was discovered in New Zealand by Mr. C. Ring, of Coromandel, who obtained a small quantity in the creek which now bears his name. Further discoveries were, however, prevented by the hostility of the natives, and it was not until 1862 that the district was proclaimed a goldfield. A small find was made in the Middle Island during 1853 at a place called "The Fortifications," now known as the West Taieri goldfield. The first payable field was at Collingwood, in the Nelson district, opened in 1857, in which year the production was about 10,500 ozs. A find of the precious metal was reported from the Lindis River in 1861, but the yield from the locality was small. In June of the same year a rich discovery was made by a former Victorian digger named Gabriel, at the place named Gabriel's Gully, although in 1858 Mr. Edward Peters had found payable quantities on the Tokamariro River at the locality afterwards known as the Woolshed diggings. Early in 1862 further auriferous deposits were found at Waipori and the Woolshed, while in August of that year Messrs. Hartley and Reilly arrived at Dunedin with over 1000 ozs. of gold obtained from beach sands on the Clutha River, and this discovery was succeeded by other alluvial finds on the tributaries of that stream. The Teviot, Benger, and Upper Manuherikia fields were opened up in March, 1863. In May a rich find was made at Hogburn, leading to further discoveries at Hill's Creek, Dunstan's Creek, Kyeburn, Hyde, Hamilton's, Macrae's, and Mount Buister. At the last-mentioned place, which is 4000 feet above the level of the sea, the deposits can be worked during only about half the year. The next discoveries were made at Cambrian's, Tinker's, Matakanui, Round Hill, Orepuki, and in recent times at Mount Criffel. Rich finds were made at the end of 1863 at Wakamarina, in the Marlborough district. In 1864 deposits were found in the bed of the Greenstone River by Maoris, and at the present time the mining population in the locality is over 30,000. The rush to the West Coast was soon followed by discoveries of auriferous deposits at Waimeri, Kanieri, Blue Spur, and Ross, and these in turn were followed by finds at Grey Valley, No Town, Red Jack's Nobles, Orwell Creek, Antonio's, Maori Gully, Lyell, Charleston, Brighton, and Kumara.

2. **Production of Gold at Various Periods.**—In the table hereunder will be found the value of the gold raised each year in the several States and New Zealand from the dates when payable discoveries were first reported. Owing to defective information in the earlier years the figures fall considerably short of the actual totals, for during the first stages of mining development large quantities of gold were taken out of Australia by

successful diggers, who preferred to keep the amount of their wealth secret. For South Australia the records in the earlier years are somewhat irregular, and the remark applies to some extent also to the returns for Western Australia and Tasmania.

The results in the table have been corrected so far as the most recent information will permit, certain systematic errors having been discovered. This will account for any differences from previously published figures.

VALUE OF GOLD RAISED IN AUSTRALIA AND NEW ZEALAND, 1851-1906.

Year.	N.S.W.	Victoria.	Q'sland.	S.A.	W.A.	Tas.	C'wealth.	N.Z.	Aust'l'sia.
	£	£	£	£	£	£	£	£	£
1851 ...	468,336	851,596	...	...	...	...	1,319,932	...	1,319,932
1852 ...	2,660,946	9,146,140	...	...	...	...	11,807,086	...	11,807,086
1853 ...	1,781,172	10,976,392	...	...	...	...	12,757,564	...	12,757,564
1854 ...	773,209	8,873,932	...	...	...	...	9,647,141	...	9,647,141
1855 ...	654,594	11,277,152	...	...	...	...	11,931,746	...	11,931,746
1856 ...	689,174	12,214,976	...	8,800	...	...	12,912,950	...	12,912,950
1857 ...	674,477	11,320,852	...	876	...	...	11,996,205	40,422	12,036,627
1858 ...	1,104,175	10,384,924	...	2,348	...	...	11,491,447	52,464	11,543,911
1859 ...	1,259,127	9,394,812	...	730	...	...	10,654,669	28,427	10,683,096
1860 ...	1,465,373	8,896,276	11,631	...	...	...	10,373,280	17,585	10,390,865
1861 ...	1,806,171	8,140,692	3,137	...	...	...	9,950,000	751,873	10,701,873
1862 ...	2,467,780	6,920,804	499	12,442	...	...	9,401,525	1,591,389	10,992,914
1863 ...	1,796,170	6,779,276	11,820	...	...	...	8,587,266	2,431,723	11,018,989
1864 ...	1,304,926	6,489,788	66,513	...	...	...	7,861,227	1,856,837	9,718,064
1865 ...	1,231,243	6,446,216	74,216	...	...	...	7,751,675	2,226,474	9,978,149
1866 ...	1,116,404	6,187,792	68,325	...	...	...	7,372,521	2,844,517	10,217,038
1867 ...	1,053,578	6,005,784	151,125	...	...	4,382	7,214,869	2,698,862	9,913,731
1868 ...	994,665	6,739,672	473,956	2,986	...	2,536	8,213,765	2,504,326	10,718,091
1869 ...	974,149	6,179,024	417,681	15,593	...	514	7,586,961	2,362,995	9,949,956
1870 ...	931,016	5,217,216	390,925	24,217	...	7,475	6,570,849	2,157,585	8,728,434
1871 ...	1,250,485	5,475,768	492,635	6,000	...	14,218	7,239,106	2,787,520	10,026,626
1872 ...	1,644,177	5,325,508	527,365	6,363	...	16,055	7,519,468	1,731,261	9,250,729
1873 ...	1,396,375	4,681,588	572,396	293	...	18,390	6,669,642	1,987,425	8,657,067
1874 ...	1,041,614	4,390,572	1,082,899	4,175	...	18,491	6,537,751	1,505,331	8,043,082
1875 ...	877,694	4,273,668	1,196,583	7,034	...	11,982	6,366,961	1,407,770	7,775,731
1876 ...	613,190	3,855,040	1,140,282	9,888	...	44,923	5,663,323	1,284,328	6,947,651
1877 ...	471,448	3,238,612	1,043,780	...	...	23,289	4,777,129	1,496,080	6,273,209
1878 ...	430,200	3,032,160	1,149,240	1,225	...	100,000	4,712,825	1,240,079	5,952,904
1879 ...	407,219	3,035,788	1,034,216	90	...	230,895	4,708,208	1,148,108	5,856,316
1880 ...	444,253	3,316,484	944,869	...	...	201,297	4,906,903	1,227,252	6,134,155
1881 ...	573,582	3,333,512	957,570	112,825	...	216,901	5,194,390	1,080,790	6,275,180
1882 ...	526,522	3,458,440	785,868	85,354	...	187,337	5,043,521	1,002,720	6,046,241
1883 ...	458,530	3,121,012	736,810	87,729	...	176,442	4,580,523	993,352	5,573,875
1884 ...	396,059	3,114,472	1,062,471	93,404	...	160,404	4,826,810	921,797	5,748,607
1885 ...	378,665	2,940,872	1,062,514	88,709	...	155,309	4,626,069	948,615	5,574,684
1886 ...	366,294	2,660,784	1,187,189	95,674	1,148	117,250	4,428,339	903,569	5,331,908
1887 ...	394,579	2,471,004	1,481,990	140,777	18,517	158,533	4,665,400	811,100	5,476,500
1888 ...	317,241	2,500,104	1,690,477	69,007	13,273	147,154	4,737,256	801,066	5,538,322
1889 ...	434,784	2,459,352	2,695,629	84,956	58,871	119,703	5,853,295	808,549	6,661,844
1890 ...	460,285	2,354,240	2,182,563	101,577	86,664	75,888	5,261,217	773,438	6,034,655
1891 ...	559,231	2,305,596	2,030,312	126,081	115,182	145,459	5,281,861	1,007,488	6,289,349
1892 ...	575,299	2,617,824	2,164,391	135,755	226,284	158,917	5,878,470	954,744	6,833,214
1893 ...	651,286	2,684,504	2,167,794	120,691	421,385	141,326	6,186,986	913,138	7,100,124
1894 ...	1,156,717	2,867,816	2,330,282	143,100	787,099	217,024	7,502,038	887,839	8,389,877
1895 ...	1,315,929	2,960,344	2,150,561	128,876	879,748	206,115	7,641,573	1,162,164	8,803,737
1896 ...	1,073,360	3,220,348	2,132,979	95,560	1,068,808	237,574	7,828,629	1,041,428	8,870,057
1897 ...	1,104,315	3,251,064	2,552,668	120,230	2,564,977	296,660	9,889,914	980,204	10,870,118
1898 ...	1,201,743	3,349,028	2,750,348	95,465	3,990,698	291,496	11,678,778	1,080,691	12,759,469
1899 ...	1,623,320	3,418,000	2,838,446	79,147	6,246,732	327,545	14,533,190	1,513,173	16,046,363
1900 ...	1,070,920	3,229,628	2,871,578	82,482	6,007,610	316,220	13,578,438	1,439,602	15,018,040
1901 ...	737,164	3,102,753	2,541,764	93,222	7,235,653	295,176	14,005,732	1,753,783	15,759,515
1902 ...	684,970	3,062,028	2,720,512	95,203	7,947,662	301,573	14,811,948	1,951,433	16,763,381
1903 ...	1,080,029	3,259,482	2,839,801	90,250	8,770,719	254,403	16,294,684	2,037,831	18,332,515
1904 ...	1,146,109	3,252,045	2,714,934	80,008	8,424,226	280,015	15,897,337	1,987,501	17,884,838
1905 ...	1,165,013	3,173,744	2,517,295	76,824	8,305,654	312,380	15,550,910	2,093,936	17,644,846
1906 ...	1,078,866	3,280,478	2,313,464	81,225	7,622,749	254,963	14,631,745	2,270,904	16,902,649
Total £	54,314,152	276,516,978	64,334,903	2,707,141	70,793,650	6,246,214	474,913,047	69,501,488	544,414,535

Preliminary figures give the production for the year 1907 as £15,535,457, distributed as follows :—New South Wales, £1,050,731; Victoria, £2,981,855; Queensland, £1,943,749; South Australia, £50,421; Western Australia, £7,210,734; Tasmania, £271,855; total for Commonwealth, £13,509,345; New Zealand, £2,026,112.

3. **Changes in Relative Positions of States as Gold Producers.**—A glance at the figures in the preceding table will sufficiently explain the enormous increase in the population of Victoria during the period 1851 to 1861, when an average of over 40,000 persons reached that State each year. Victoria maintained its position as the chief gold-producer for a period of forty-seven years, or up to 1898, when its production was first outstripped by that of Western Australia, the latter State from this year onward contributing practically half the entire yield of the Commonwealth. New South Wales occupied the second place on the list until 1876, when Queensland returns exceeded those of the parent State, a condition of things that has been maintained ever since. Up to the year 1884 Tasmania and South Australia in turn occupied the position of lowest contributor to the total gold yield of the Commonwealth, but from 1894 onwards the returns from the former State have been in excess of those of the latter. Taking the average of the last six years the relative positions of each State and of New Zealand in regard to the gold production of Australasia were as follows:—

RELATIVE POSITIONS OF STATES AS GOLD PRODUCERS, 1901 TO 1906.

State.	Annual Average of Gold Production, 1901 to 1906.	Percentage on Commonwealth.	State.	Annual Average of Gold Production, 1901 to 1906.	Percentage on Commonwealth.
Commonwealth ...	£	**100.00**	New Zealand ...	2,015,898	13.26*
Western Australia	8,051,110	52.97	New South Wales	982,025	6.46
Victoria ...	3,188,422	20.98	Tasmania ...	283,085	1.86
Queensland ...	2,607,962	17.16	South Australia	86,122	0.57

* Ratio to Commonwealth only; to the total of Australasia the percentage would be 11.71.

4. **Methods of Gold Mining Adopted in Each State.**—The circumstances of gold mining in the various States are not quite identical, for which reason reference is made to that of each State.

(i.) *New South Wales.* In New South Wales the earlier "rushes" were to surface alluvial or shallow-sinking grounds. Many of these were apparently soon worked out, but there is reason to believe that in some instances payable results would be obtained by treating the rejected wash-dirt on more scientific principles. With the exhaustion of the surface deposits discoveries were made by sinking to what are called deep alluvial leads, representing the beds of old drainage channels in Pliocene times. The first of these deep alluvial leads was discovered at Forbes, in New South Wales, in 1862. The Tertiary deep leads at Gulgong were discovered in 1871. Cretaceous leads occur at Tibooburra, and detrital gold has been found in Permo-carboniferous conglomerates at Tallawang. The method of dredging is at present being extensively used for winning gold from the beds of running streams, and also in loose river flats and other wet ground where sinking would be impracticable. The system was introduced from New Zealand, where it was originally applied with great success on the Clutha River, and there are now dredges working on practically all the auriferous rivers of New South Wales. Hydraulic sluicing is also employed in several places, the necessary machinery being fitted to a pontoon for convenience in moving from place to place. The quantity of alluvial gold obtained, other than by dredging, amounted to 25,931 ozs. in 1906, the chief yields being—Braidwood, 2350 ozs.; Adelong, 1126 ozs.; Batlow, 1200 ozs.; Tumbarumba, 1511 ozs.; Gulgong, 1445 ozs.; and Parkes, 1291 ozs. The quantity obtained by dredging was 36,648 ozs., the largest returns being obtained at Araluen, with 14,064 ozs.; Adelong, 7048 ozs.; Stuart Town, 6875 ozs.; Sofala, 3315 ozs.; and Wellington, 2086 ozs. At the present time the Cobar district is the chief centre of the production from quartz, the yields from the Canbelego and Cobar fields included therein being respectively 42,771 ozs. and 25,914 ozs. Next comes the Wyalong field, with 22,936 ozs.; Hillgrove, with 14,643 ozs.; and Wellington, 10,404 ozs.

The table below shews the yield from alluvial and quartz working in each of the principal districts during 1906:—

GOLD WON IN NEW SOUTH WALES, ALLUVIAL AND QUARTZ, 1906.

District.	Alluvial.		Quartz.	Total.
	Other than by Dredging.	By Dredging.		
	ozs.	ozs.	ozs.	ozs.
Bathurst	3,903	417	16,243	20,563
Cobar	...	...	68,771	68,771
Lachlan	3,475	...	41,823	45,298
Mudgee	3,952	2,086	18,301	24,339
Peel and Uralla	1,276	67	16,016	17,359
Southern	4,016	15,320	9,438	28,774
Tambaroora and Turon	3,436	10,190	992	14,618
Tumut and Adelong	4,839	8,568	1,592	14,999
Other Districts	1,034	...	4,855	5,889

(ii.) *Victoria.* Quartz-reefing predominates in Victoria, although a considerable amount of gold is obtained from alluvial workings, both surface and deep leads. The deepest mines in Australia are found in the Bendigo district, where two shafts are at present over 4000 feet down, while at least nine others descend to between 3000 and 4000 feet. A fair amount of attention is given to dredging and hydraulic sluicing, particularly in the Beechworth and Castlemaine districts. The yields from alluvial and quartz in the chief mining districts of the State during last year were as follows:—

GOLD WON IN VICTORIA, ALLUVIAL AND QUARTZ, 1906.

District.	Alluvial.	Quartz.	Total.
	ozs.	ozs.	ozs.
Ararat and Stawell	8,638	16,261	24,899
Ballarat	51,881	112,184	164,065
Beechworth	103,514	31,298	134,812
Bendigo	9,270	211,917	221,187
Castlemaine	32,990	66,396	99,386
Gippsland	8,778	88,402	97,180
Maryborough	38,595	41,672	80,267

(iii.) *Queensland.* Operations in Queensland are at present chiefly confined to quartz reefing, the yield from alluvial in 1906 being only about 1 per cent. of the total. The celebrated Mount Morgan mine occupies the position of being at the same time the most productive gold mine and the most productive copper mine in the State. The yields from the principal fields are given below.

GOLD WON IN QUEENSLAND, ALLUVIAL AND QUARTZ, 1906.

District.	Alluvial.	Quartz.	Total.
	ozs.	ozs.	ozs.
Charters Towers	402	205,230	205,632
Gympie	481	108,435	108,916
Mount Morgan...	342	129,682	130,024
Ravenswood	658	35,369	36,027
Croydon	25	23,938	23,963
Clermont	6,657	535	7,192
Other districts	3,073	29,809	32,882

(iv.) *South Australia.* In South Australia alluvial gold has been worked for many years in the gullies round Adelaide, while a fair amount of gold has been obtained by this method at Teetulpa, in the northern areas. There are some valuable reefing fields in the Echunga district, at Mt. Grainger, Barossa, Wadnaminga, Mannahill, etc., but they have not been developed to the extent they deserve. Good stone was discovered a few years ago at Tarcoola, but the present returns are comparatively small. The rich finds at Arltunga in the centre of the continent, within the boundaries of the Northern Territory, have not yielded up to expectations. The official returns shew that there were forty-one gold-dredging leases in existence last year. Satisfactory yields were obtained at Bullaparata, and operations are being extended at Jupiter Creek, Echunga, and Long Gully, in the same district. South Australia is not divided into mining districts as is the case in the other States.

(v.) *Western Australia.* In Western Australia the operations are confined principally to quartz reefing, the returns from ordinary alluvial and hydraulic sluicing being comparatively small. The total production of gold from all sources during last year was 1,736,295 ounces, of which only 0.8 per cent. was alluvial. The production from the more important mines was as follows:—

GOLD WON IN WESTERN AUSTRALIA, ALLUVIAL AND QUARTZ, 1906.

District.	Alluvial.	Dollied and Specimens.	Crushed.	Total.
	ozs.	ozs.	ozs.	ozs.
Peak Hill	226	358	1,424	2,008
East Murchison	486	663	94,622	95,771
Murchison	1,733	1,151	179,512	182,396
Mount Margaret	67	959	165,232	166,258
North Coolgardie	135	320	110,502	110,957
North-east Coolgardie	2,562	2,408	39,604	44,574
East Coolgardie	2,580	2,427	984,350	989,357
Coolgardie	89	1,261	62,680	64,030
Yilgarn	32	50	23,465	23,547
Dundas	85	271	20,079	20,435
Broad Arrow	4,329	192	16,989	21,510
Other districts	1,376	137	13,939	15,452

(vi.) *Tasmania.* The yield from Tasmania is also chiefly obtained from quartz reefing, although there is a little alluvial mining carried on in the Lyall district. The yields from the chief centres in 1906 are shewn hereunder:—

	Northern & Southern.	North-eastern.	Eastern.	North-western.	Western.	Total.
	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.
Quartz	29,476½	429¼	3,696½	—	25,000	58,602¼
Alluvial	1,740	48½	—	1¾	154	1,944½

The total production equalled 60,023 fine ounces, valued at £254,963.

(vii.) *New Zealand.* The yield of gold in New Zealand during 1906 was £2,270,904. of which quartz mining was responsible for £1,494,087, dredging £501,199, and alluvial £275,618. Of the total yield from quartz the Northern district returned £1,312,720. the West Coast £169,929, and the Southern £11,438. The principal quartz mines are situated in the Ohinemuri and Thames counties. On the Waihi and Karangahake the veins give every indication of permanency. The Waihi is the most productive gold mine in Australasia, and during 1906, from a total of 328,866 tons of quartz, gave a yield valued at £781,553. The company paid in dividends during 1906 the sum of £347,135. In the Thames district the Waiotahi produced 18,002 tons of ore during the year, averaging £12 8s. 6d. per ton, and declared a dividend of £183,000. The Progress mines were the chief producers in the South Island during 1906, their output of bullion being £91,200. The Keep-it-Dark Company, in the Seine district, has been in existence thirty-three years and still pays handsomely. During the whole period the amount of capital called up was only £6208, or six shillings and twopence per share, against a profit of £7 14s. 8d. per share. New Zealand may be considered as the pioneer of dredge-mining in Australia, although the supply from this source is annually falling off owing to depletion of suitable areas. In the West Coast and Southern districts 167 dredges were at work in 1906, producing, as previously stated, £501,199 worth of gold. The production from alluvial was £275,618, the greater portion being obtained in the Otago and Southland districts. Hydraulic sluiciing, or sluicing and elevating, are the methods employed in working the deposits.

5. **Remarkable Masses of Gold.**—The first "nugget" found in Australia was obtained at Hargraves, in New South Wales, on the 13th May, 1851, and weighed a little over 1 lb. In the same year the Burrandong nugget, found near Orange, weighed 2217 ozs. 16 dwts., and the "Brennan" was sold in Sydney for £1156. During the period 1880-82 nuggets weighing from 59 ozs. to 1393 ozs. were found at Temora. The "Jubilee," which weighed 347 ozs., was found in 1887.

In Victoria a nugget found at Canadian Gully in 1853 weighed 1620 ozs.; the "Welcome," found at Ballarat in 1858, weighed 2217 ozs.; and the "Welcome Stranger," unearthed in 1869 at Mount Moliagul, near Dunolly, weighed 2280 ozs.

In addition to these alluvial nuggets large masses of gold have been found *in situ* in reefs. A mass known as "Kerr's Hundredweight," discovered in 1851 at Hargraves, in New South Wales, yielded 106 lbs. of gold. Probably the largest mass of gold ever found was obtained in Beyer's and Holtermann's claim at Hill End in 1872. The total weight of the specimen, including the small amount of quartz in which it was encased, was 630 lbs. Its dimensions were 4 ft. 9 in. high, 2 ft. 2 in. wide, and about four inches thick, while the value was set down at £13,000.

6. **Modes of Occurrence of Gold in Australia.**—(i.) *New South Wales.* The principal gold deposits worked with profit in New South Wales are classified by the Government Geologist of that State as follows:—1. Alluvial or detrital gold. 2. Auriferous reefs or lodes. 3. Impregnations in stratified deposits, such as slate, quartzite, and volcanic tuff. 4. Impregnations in igneous rocks, such as granite, serpentine, felsite, etc. 5. Irregular deposits, such as bunches of auriferous ironstone. The detrital gold is found chiefly in Recent and Pleistocene alluvials, in beach sands along the coast, in Tertiary alluvial leads, in Cretaceous alluvial leads, and in Permo-carboniferous conglomerates. In the beach sands the gold is found in association with platinum and tin. In reefs the gangue is principally composed of quartz; calcide is often present, and barytes and fluor-spar are also met with. At Hill End gold was found associated with muscovite. In the oxidised portions of auriferous reefs, limonite, malachite, azurite, and cuprite are found, while below the water-line the veins are impregnated with iron pyrites, galena, copper pyrites, zinc blende, pyrrhotine, and stibnite. The auriferous quartz veins fall into three categories—fissure veins, bedded veins, and contact veins. Large masses of gold have occasionally been found in lodes, such as "Kerr's Hundredweight," alluded to in a preceding paragraph. The so-called saddle reefs in the Hargraves district are identical with those worked so profitably and at such great depths round Bendigo, in Victoria. Altogether gold has been found in association with over forty minerals in New South Wales, one of the most peculiar products being known as "mustard" gold, resultant on the decomposition of tellurides. The substance has the appearance of dull yellow clay, but it readily burnishes when pressed with a knife blade. Native gold has never been found in an absolutely pure state in New South Wales, being always alloyed with silver and also traces of other metals.

(ii.) *Victoria.* In Victoria the occurrence of gold is noted under two main headings—1. Matrix gold. 2. Redistributed gold. The so-called matrix gold occurs in quartz reefs of various kinds, in Ordovician, Silurian, and Lower devonian Sedimentary, metamorphic, and granitoid and porphyritic rocks; in reefs, veins, and lenticular deposits in dykes of granitoid, porphyritic, dioritic, and felspathic rocks, or between dykes and walls of intruded rocks; or in fracture planes or joints in granitoid rocks. Under the above conditions the gold is either free or in combination with iron, arsenic and iron, copper and iron, zinc, lead, antimony, silver, etc.

The redistributed gold is found in sands and gravels of existing streams, in deep leads, in littoral gravels and sands, and in cleavage and joint planes of rocks underlying the deep leads.

(iii.) *Queensland.* The most remarkable mode of occurrence in Queensland is that at the Mount Morgan mine, which presents so many novel features as to demand special reference. At this mine the siliceous material forming the ore body was found enclosed in igneous rock, which continued to the surface, except for a funnel-shaped mass of sandy beds and secondary ore outcropping near the summit of the mount. In a crevice of these sandy beds was deposited a plug of desert sandstone nearly 100 feet deep at its thickest part, with a surface area of three-fifths of an acre, quite distinct from and unconformable to, the beds of loose sand which underlay and surrounded it, and more ferruginous towards the outside than in the centre of its area. A ferruginous belt extended outside the plug, attaining a depth of 150 feet from the surface. It was hard and extremely rich in gold, which was disseminated through the stone in microscopic particles. Beneath the ironstone there was a band of loose sand or soft bed, in some places many feet in thickness. also extremely rich in gold. Underlying and almost surrounding the secondary ores, a great mass of siliceous and kaolin ore was found, denuded of its gold, which is supposed to have been leached out and conveyed in solution and again deposited in the enriched zone. The impoverishment prevails between the depths of 180 and 300 feet, the friable silica being cellular from the removal of the pyrites. The evidences of the oxidisation and leaching action are greater towards the centre than along the walls of the mass. Below the skeleton ore an unaltered zone of copper sulphide ore was found, in which gold was irregularly distributed, the copper increasing with the depth. Outside both sulphide and skeleton ore are walls of crystalline igneous rocks. Dykes, later than the massive igneous rocks but older than the enriched zone, traverse the siliceous sulphides in various directions.

(iv.) *Western Australia.* The Government Geologist of Western Australia classifies the conditions under which gold is found in that State as follows:—(*a*) Native metals. (*b*) Compounds with tellurium and other elements. (*c*) Associated with other minerals.

Native gold occurs in several different forms, to which popular names descriptive of their appearance have been given, such as crystalline, dendritic, rough, flake, mustard, and sponge gold. Tellurides of gold abound at Kalgoorlie and Mulgabbie. Calaverite is the most frequently occurring mineral, but petzite, goldschmidtite, and the minerals termed Kalgoorlite and Coolgardite are also found. Of the metallic minerals, iron in the form of iron pyrites and oxides is widely distributed. Galena comes next, whilst amongst other minerals found in association with the precious metal may be mentioned zinc blende, arsenopyrite, vanadinite, bismuth, pyrrhotite, chalcopyrite, bournonite, copper, scheelite. Quartz is of course the commonest of the earthy secondary minerals, but calcite, chalcedony, gypsum, actinolite, chlorite, and others are also found in association with gold. Some of the native gold is found to be remarkably pure, specimens of sponge gold from lodes at Boulder, Kalgoorlie, and East Coolgardie being found to contain 99.91 per cent. of the precious metal with but 0.09 per cent. of silver.

7. **Place of Commonwealth in the World's Gold Production.**—In the table on the next page will be found the estimated value of the world's gold production, and the share of the Commonwealth therein during the last six years.

The share of the Commonwealth in the world's gold production is considerably less than it was six years ago. As the table shews, the world's total has advanced annually at the rate of between five and six million pounds sterling, the bulk of the increase being contributed by the South African mines, the production from the Transvaal being nearly £25,000,000 in 1906 as against £7,000,000 in 1902.

WORLD'S GOLD PRODUCTION. 1901-6.

Year.	World's production of gold.*	Gold produced in Australia.	Percentage of Australian on Total.*
	£	£	%
1901	52,738,000	14,006,000	26.56
1902	60,196,000	14,812,000	24.61
1903	66,933,000	16,295,000	24.35
1904	71,230,000	15,897,000	22.32
1905	77,267,000	15,551,000	20.13
1906	83,090,000	14,632,000	17.61

* These figures are subject to small corrections.

The number of persons engaged in gold mining in each State and New Zealand during the last six years is shewn in the following table:—

PERSONS EMPLOYED IN GOLD MINING, 1901 TO 1906.

State.	Persons Employed in Gold Mining.					
	1901.	1902.	1903	1904.	1905.	1906.
	No.	No.	No.	No.	No.	No.
New South Wales	12,064	10,610	11,247	10,648	10,309	8,816
Victoria	27,777	26,151	25,208	24,331	25,369	25,304
Queensland	9,438	9,045	9,229	9,620	10,641	9,842
South Australia	1,000	1,000	1,000	1,000	900	900
Western Australia	19,771	20,476	20,716	18,804	18,382	17,926
Tasmania	1,112	1,038	973	1,076	1,207	988
Commonwealth	71,162	68,320	68,373	65,479	66,808	63,776
New Zealand	12,732	11,398	10,210	10,898	9,362	9,089

§ 3. Platinum and the Platinoid Metals.

1. **Platinum.**—The existence of platinum was first noted in New South Wales in 1851 by Mr. S. Stutchbury, who found a small quantity near Orange. Since the year 1878, small quantities of the metal have been obtained from beach sands in the northern coastal district. Platiniferous ore was noted in 1889 at Broken Hill. The chief deposits at present worked in the State are situated at Fifield, near Parkes, but the entire production last year was small, amounting to only 205 ozs., valued at £623.

In Victoria the metal has been found in association with copper at the Walhalla Copper Mine in Gippsland, but the mine is not at present being worked. The metal has also been found in small quantities in black sand beaches in the Otago district of New Zealand, and is present in the alluvial wash at Takaka, Nelson. Up to the present, however, the production has been trifling.

2. **Osmium, Iridium, etc.**—Small quantities of osmium, iridium, and rhodium, are also found in various localities. As far back as 1860, the Rev. W. B. Clarke states that he found native iridium. Platinum, associated with iridium and osmium, has been found in the washings from the Aberfoil River, about 15 miles from Oban, on the beach sands of the northern coast; in the gem sand at Bingara, Mudgee, Bathurst, and other places.

In some cases, as for example in the beach sands of Ballina, the osmiridium and other platinoid metals amount to as much as 40 per cent. of the platinum, or about 28 per cent. of the whole metallic content.

In Victoria, iridosmine has been found near Foster, and at Waratah Range, South Gippsland.

§ 4. Silver.

1. **Discovery in Each State.**—The famous Polish explorer, Count Strzelecki, was the first to note the occurrence of silver in New South Wales. In a letter addressed to Captain King, R.N., bearing date 26th October, 1839, he speaks of a "specimen of native silver in hornblende rock." In his work, "The Southern Goldfields," published in 1860, the Rev. W. B. Clarke also mentions a discovery of the metal. Since that date silver has been found in a large number of localities throughout the entire State. The Broken Hill field, discovered in 1882 by Mr. Charles Rasp, constitutes one of the richest and most productive mines in the world. In illustration of the value of the mine it may be stated that one of the original fourteenth shares, bought for £110, increased in value within a year to £30,000, while six years later, with dividends and bonuses added, it was reputed to be worth £1,250,000 sterling. Further reference to the production from the Broken Hill district will be made on a subsequent page. Amongst other important finds in New South Wales may be mentioned Boorook, near Tenterfield, discovered in 1878; Sunny Corner, opened in 1886; Emmaville, 1884; Rivertree, on the Clarence River, 1887; Borah Creek, near Inverell, 1870; Rockvale, 1895.

Mining for silver is not carried on to any extent in Victoria, the production recorded in the mining returns being chiefly obtained in the process of refining gold, and the same applies in the case of the production from Western Australia. Tasmania is the only other State in the Commonwealth which produces any considerable quantity of silver. The famous Zeehan mine, on the west coast, was discovered in 1885, and the deposits at Heazlewood River in 1887. Both districts are still opening up rich deposits of ore. In New Zealand, and particularly in the North Island, the gold generally contains a large proportion of silver, but the rich deposits of argentiferous ores at Pulupuhi, Collingwood, Mount Rangitoto, and other places have not yet been systematically exploited.

2. **Development of Silver Mining.**—In illustration of the great development of silver mining in Australia the following table has been compiled, shewing the production of silver, silver lead and ore, and lead from each State during the years 1881, 1891, and 1901 to 1906:—

PRODUCTION OF SILVER AND LEAD, AUSTRALASIA, 1881 TO 1906.

State.	Silver, Silver Lead Ore, Lead, etc., raised during							
	1881.	1891.	1901.	1902.	1903.	1904.	1905.	1906.
	£	£	£	£	£	£	£	£
New South Wales ...	...	3,621,614	1,954,964	1,487,837	1,539,989	2,131,504	2,496,709	2,864,057
Victoria	5,239	6,017	6,550	4,900	4,898	4,990	4,100	4,980
Queensland	13,494	21,879	69,234	72,851	109,177	96,418	102,388	151,577
South Australia ...	1,182	5,927	3,886	42,063	10,870	1,387	3,244	12,982
Western Australia ...	11,224	250	7,718	9,467	19,153	45,912	44,278	37,612
Tasmania	...	62,138	325,335	387,024	428,125	318,971	415,248	552,704
Commonwealth ...	...	3,717,825	2,367,687	2,004,142	2,112,212	2,599,182	3,065,967	3,623,912
New Zealand ...	4,236	5,151	65,258	71,975	91,497	112,875	120,542	143,572

3. **Chief Centres of Silver Production.**—Broken Hill, in New South Wales, and Zeehan, in Tasmania, are the great centres of silver production in Australasia.

(i.) *Broken Hill.* The bulk of the production is, of course, from New South Wales, being contributed mainly by the mines in the celebrated Broken Hill district. The wonderful productiveness of this area is well illustrated by the following table, compiled by the Department of Mines in New South Wales. The particulars refer to the chief mines on the field:—

RETURNS OF BROKEN HILL SILVER MINES, 1906.

Mine.	Authorised Capital.	Value of Output to End of 1906.	Dividends and Bonuses Paid to End of 1906.
	£	£	£
Broken Hill Proprietary Co. Ltd.	384,000	29,174,287	9,152,000
Broken Hill Proprietary Block 14 Co. ...	155,000	2,874,988	357,827
British Broken Hill Proprietary Co. ...	264,000	1,767,698	270,000
Broken Hill Proprietary Block 10 Co. ...	1,000,000	2,979,923	1,050,000
Sulphide Corporation Ltd. (Central Mine) ...	1,100,000	6,103,908	446,875
Broken Hill South Silver Mining Co. ...	200,000	2,377,000	425,000
North Broken Hill Mining Co.	140,000	392,708	95,440
Broken Hill Junction Mining Co.	100,000	706,646	85,000
Broken Hill Junction North Silver Mining Co.	180,000	244,273	25,793
Broken Hill South Blocks Ltd.	200,000	26,929	...
New Australian Broken Hill Consols Ltd. ...	600,000	150,240	50,000
Totals	4,323,000	46,798,600	11,957,935

The marvellous wealth of this field may well be seen by comparing the production therefrom with the total mineral production of the Commonwealth, viz., £660,000,000, the Broken Hill district contributing, therefore, about 7 per cent. of the entire mineral yield of Australia.

At Broken Hill a considerable quantity of high grade ore has been found at or near the surface, while shafts and drives have been put in along the lode to intersect ore bodies at greater depths. The deepest shaft on the field is on Block 10, where a depth of 1400 ft. has been reached, while shafts at the Proprietary and Junction North have been put down to a depth of 1300 and 1200 ft. respectively. Broken Hill itself consists of a low range about two miles in length, composed of crystalline gneisses passing into banded quartzites, micaceous and hornblendic schists, and garnetiferous sandstones. The rocks are bent into an anticlinal fold, the axis being coincident with the crown of the range, and the strata dipping away on each side almost parallel to the surface of the slope. The lode occupies the saddle-shaped cavity formed by the contortion of the strata, and its outcrop is coincident with the highest part of the range for about a mile and a half in length. Practically the whole of this outcrop has been removed in an open cut varying in width from 20 to 100 ft. The outcrop was composed of massive manganiferous limonite associated with siliceous and aluminous material, and containing numerous vugs bearing cerussite, chloride, iodide, and bromide of silver and stalactites of psilomelane. The iron ore contained from 2 to 30 ozs. of silver to the ton and from 10 to 25 per cent. of lead, and was extremely useful in fluxing the siliceous ores beneath it. Underneath the ironstone were found (1) deposits of carbonate of lead and a gangue composed of siliceous and aluminous material containing manganiferous iron oxide; (2) other high-grade ores containing kaolin, garnets, quartz with native silver, and also chlorides, chloro-bromides, and iodides, and yielding 4 to 300 ozs., of silver to the ton and a small quantity of lead; (3) a dry low-grade ore yielding from 5 to 40 ozs. to the ton. Below these so-called oxidised ores the lode consisted of rich sulphides containing galena, zinc blende, quartz, garnet, rhodonite, felspar, iron and copper pyrites, and small quantities of mispickel, wulfenite, and fluorspar. The sulphide ore contains from 6 to 36 ozs. of silver and 2 to 3 dwts. of gold to the ton, from 5 to 50 per cent. of lead, and 14 to 30 per cent. of zinc.

(ii.) *Zeehan*. During the past year the principal silver-producing centres of Tasmania shewed marked increases in production. Large quantities of high-grade galena were raised from the Mt. Zeehan mines. The Zeehan Western shaft is now down to

800 ft., and a similar depth has been reached at the Zeehan Montana. At Mount Read developmental work has been carried on, the zinc-lead sulphide ore body carrying ore worth £5 or £6 a ton gross. Rich galena is being raised in the Farrell district, the product of the North Farrell Mining Company being worth £11 and £12 per ton at the mill. During 1906 the Magnet mine raised 7787 tons of ore valued at £51,147. The ore-shoot in this mine has been proved to exceed 1300 ft. in length, and it is improving in solidity as it descends. In the Heazlewood district work at the Long Tunnel Silver-Lead mine is being resumed, and other properties are being obtained both for copper and lead.

The effect of the improved treatment of refractory ores is seen particularly in the returns for the Broken Hill district of New South Wales, where the export of zinc spelter and concentrates has increased from 97 tons valued at £988 in 1889, to 3666 tons valued at £292,806 in 1906. In addition to the numerous plants for dealing with refractory ores on the fields itself, the Broken Hill Company possesses extensive smelting works at Port Pirie in South Australia. At Dapto and Cockle Creek in New South Wales there are also smelting establishments capable of dealing with considerable bodies of ore of various classes. The Tasmanian silver and lead ores are principally dealt with by the Tasmanian Smelting Company's works at Zeehan.

4. **World's Production of Silver.**—The world's production of silver during the last six years is estimated to have been as follows:—

WORLD'S PRODUCTION OF SILVER, 1901 TO 1906.

Year	1901.	1902.	1903.	1904.	1905.	1906.
World's Production* in 1000 fine ozs.	174,851	163,937	173,222	176,840	181,338	185,035

* Add 000 to figures for fine ounces.

The Commonwealth's share in the world's silver production averages about 13 per cent.

5. **Prices of Silver.**—As the production of silver is dependent to a very large extent on the price realised, a statement of the average price per standard ounce paid by the London Mint at various periods and during the last six years is given below.

PRICES OF SILVER, 1871 TO 1906.

Year	1871.	1881.	1891.	1901.	1902.	1903.	1904.	1905.	1906.
Pence per Standard oz. ...	$60\frac{7}{16}$	$51\frac{13}{16}$	$45\frac{5}{16}$	$27\frac{15}{16}$	$24\frac{1}{16}$	$23\frac{11}{16}$	$26\frac{1}{2}$	$27\frac{7}{16}$	$31\frac{1}{16}$

During the month of November, 1906, owing to the small sales in New York, and also to the fact that the Indian, American, and Mexican Governments were all buying silver, the price rose to $33\frac{1}{8}$d., the highest realised since 1893, when the average stood at $36\frac{5}{16}$d.

6. **Employment in Silver Mining.**—The number of persons employed in silver mining during each year of the period 1901-6 is given below:—

PERSONS EMPLOYED IN SILVER MINING, 1901 TO 1906.

State.	1901.	1902.	1903.	1904.	1905.	1906.
New South Wales ...	6,298	5,382	6,035	7,071	7,887	9,414
Victoria...	...	...	...	...	...	13
Queensland	40	100	458	45	293	282
South Australia ...	150	150	150	50	50	50
Western Australia ...	...	...	...	...	...	...
Tasmania	2,414	2,893	1,681	1,101	1,512	1,745
Commonwealth ...	8,902	8,525	8,324	8,267	9,742	11,504

As the table shews, the bulk of the employment was in New South Wales and Tasmania, the quantity of silver raised in the other States, excepting Queensland, being unimportant.

§ 5. Copper.

1. **History.**—(i.) *New South Wales.* It is believed that copper was the first metal mined for in New South Wales, the earliest attempts at working taking place about the year 1844. The deposits at Copper Hill, near Molong, were worked in 1845, as well as those in the neighbourhood of Canowindra. In 1847 mining for copper was commenced at the Summerhill Estate, near Rockley. The Rev. W. B. Clarke reported the discovery of copper ores near Marulan in 1851, and at Quidong, in the Snowy River district, in 1852. The principal seat of the copper-mining industry at the present date is in the Cobar district, the value of the deposits there being first recognised in 1869. The Mount Hope field was opened in 1878, Nymagee 1880, and Lake George in 1882.

(ii.) *Victoria.* In Victoria copper has been found at Bethanga, Sandy Creek, near Bogong, Walhalla on the Thomson River, and on the Snowy River and at Mount Lara near Buchan, but there are no mines at present being worked for their copper contents.

(iii.) *Queensland.* The first important discovery of copper in Queensland was made in the year 1862, when a rich lode was found near Clermont, on the Peak Downs. A further discovery was made during the same year at Mount Perry. Copper, tin, silver, and gold were found on the Herberton, Walsh, and Tinaroo mineral fields in 1879. The famous Mount Morgan, discovered in 1882, also produces a considerable amount of copper, the production therefrom in 1906 exceeding that from any other district.

(iv.) *South Australia.* In South Australia the first rich copper lode was discovered at Kapunda in 1842, and about 2000 tons of metal were produced each year up to the year 1879 when the mine closed down. At the present time the deposits are being worked on the tribute system, but arrangements are in progress which are expected to result in the mine being fully worked again. The Burra Burra mine was discovered in 1845 by a shepherd named Pickett, and it proved a veritable cornucopia for the fortunate investors in its original stock. The capital consisted of £12,320 in £5 sharess and no subsequent call was made on the shareholders, while the dividends paid amounted to £800,000. During the twenty-nine and a half years in which the mine was working the copper produced reached a value of £4,749,224. Operations were discontinued at this mine in 1877, but recent prospecting between surface and water-level has disclosed the existence of considerable bodies of low-grade ores. Yorke's Peninsula, between Spencer's Gulf and Gulf of St. Vincent, contains a very large area of copper bearing country, the principal fields being at Wallaroo and Moonta. The Wallaroo mine was discovered in 1860, and during the first twenty-six years of its existence produced over £2,000,000 worth of copper. The Moonta mine, discovered in 1861, has proved to be one of the richest mines in the State. Its production during the first twenty-six years of its working was no less than £4,580,000. Some years ago the Wallaroo and Moonta mines amalgamated. The production from the united fields for the year ended June 1906, was valued at £275,390. The Blinman mine in the Flinders Range was discovered in 1861, and by the year 1874 had produced copper to the value of £250,000. This mine is at present held by the Tasmanian Copper Company Limited. Its production last year reached a value of £74,000.

(v.) *Western Australia.* The inception of active mining operations in Western Australia dates from the year 1842, when lead and copper mines were discovered in the Northampton district, but working was carried on in a most perfunctory manner in the early days, sinking being discontinued as soon as the lodes shewed signs of contraction. Rich ores of copper have been located at Whim Creek, in the Pilbara district, about fifty miles eastward of Roeburne, the copper ore being removed by quarrying. Promising lodes have also been struck at the Irwin mines, between Arrino Springs and the Irwin River. The Kimberley district is intersected in places by copper and lead deposits in association with gold, and a rich lode has been located at Mount Barren, about 120 miles to the eastward of Albany, while various quartz reefs in the Wongan Hills contain copper in association with gold and iron.

(vi.) *Tasmania.* Tasmania at the present time occupies the position of the largest producer of copper in Australia, the bulk of its production coming from the celebrated Mount Lyell mines, discovered in 1886. The copper-bearing country in this district stretches from Mount Lyell, Mount Tyndall, Mount Read, and Mount Murchison, to some distance north of the Pieman River. Copper mining has also been started on the North-west Coast, notably in the Stowport and Blythe River districts, and some attention has been given to the deposits at Rocky Cape and Boat Harbour.

(vii.) *New Zealand.* Copper ore has been found and worked in different localities in New Zealand, but in a desultory fashion only, the production to the end of 1906 being 1421 tons, valued at £18,228.

2. **Production of Copper.**—The production of copper during the years 1901 to 1906 in the various States of the Commonwealth has been influenced considerably by the ruling prices, which have fluctuated in an extraordinary way. The value of the production in earlier years and for 1901-1906 is shown in the following tables :—

VALUE OF PRODUCTION OF COPPER, AUSTRALASIA, 1881 TO 1906.

State.	1881.	1891.	1901.	1902.	1903.	1904.	1905.	1906.
	£	£	£	£	£	£	£	£
New South Wales ...	267,884	119,195	412,292	307,806	462,640	406,001	527,403	789,527
Victoria	8,186	216	...	...	500	...	...	...
Queensland ...	19,637	865	194,227	189,200	285,122	257,896	503,547	916,546
South Australia ...	418,296	239,436	500,077	432,525	472,093	438,960	483,431	743,671
Western Australia	...	4,463	75,246	8,090	56,541	25,180	16,266	50,337
Tasmania	...	...	1,026,748	710,146	511,801	569,053	563,275	844,663
Commonwealth ...	714,003	364,175	2,208,590	1,647,767	1,788,697	1,697,090	2,093,922	3,344,744
New Zealand ...	36	4	105	...	123	...	17	...

3. **Price of Copper.**—The great variation in price that the metal has undergone is shewn in the following table of prices realised for standard and best selected copper since 1896:—

FLUCTUATION IN THE VALUE OF COPPER, 1896 TO 1907.

Year.	Average Price of Copper per Ton.						Year.	Average Price of Copper per Ton.					
	Standard.			Best Selected.				Standard.			Best Selected.		
	£	s.	d.	£	s.	d.		£	s.	d.	£	s.	d.
1896	46	18	2	50	13	5	1903	58	3	2	62	13	8
1897	49	2	6	52	5	6	1904	59	0	7	62	13	0
1898	51	16	7	55	8	3	1905—Jan. to June	67	2	1	71	3	9
1899	73	13	9	78	2	3	July to Dec.	72	1	11	77	7	11
1900	73	2	5	78	9	1	1906—Jan. to June	82	2	8	86	18	11
1901	66	19	1	73	8	2	July to Dec.	92	15	1	97	11	1
1902	52	8	3	56	12	7	1907—Jan. to June	103	4	4	111	8	4

4. **Relationship to World's Production.**—The world's production of copper during the last six years is estimated to have been as follows:—

WORLD'S PRODUCTION OF COPPER, 1901 TO 1906.

Year	1901.	1902.	1903.	1904.	1905.	1906.
World's Production (in tons) ...	516,628	541,295	574,775	644,000	682,125	711,675

Of the total production last year the share of the Commonwealth amounted to about 5 per cent.

5. **Employment in Copper Mining.**—The number of persons employed in copper mining during the last six years was as follows:—

PERSONS ENGAGED IN COPPER MINING, 1901 TO 1906.

State.	Persons Engaged in Copper Mining.					
	1901.	1902.	1903.	1904.	1905.	1906.
New South Wales ...	2,964	1,699	1,816	1,850	2,171	3,047
Victoria	4	...	...	...	...	3
Queensland	814	666	1,418	1,094	1,435	2,598
South Australia ...	4,000	4,000	4,000	4,000	4,500	5,000
Western Australia ...	321	113	193	169	125	296
Tasmania	*	*	*	925	2,269	2,391
Commonwealth ...	8,103	6,478	7,427	8,038	10,500	13,335

* Included with silver miners.

§ 6. Tin.

1. **History.**—(i.) *New South Wales.* The probable occurrence of tin in New South Wales was first referred to by the Rev. W. B. Clarke as early as 1849, while the same author notes having obtained a specimen in the Kosciusko district in 1851 and in the New England district in 1853. He also reported the discovery of stanniferous deposits at different localities in the Darling Downs, Queensland. In 1872 the Messrs. Fearby discovered tinstone near Inverell, and the present Elsmore mine was opened near the spot. The news of the discovery of tin in the New England district attracted a mild rush, and in March, 1872, valuable deposits of stream tin were found at Vegetable Creek. It is interesting to note that native tin, which is extremely rare, was discovered at Oban, in this district. At Cope's Creek stanniferous gravels occur in the channel of the stream and in the slopes adjacent to it. Post-tertiary deposits of tin-bearing ore have been found at Emmaville, where mining was commenced soon after the opening of the district. In the southern portion of the State deposits have been discovered at Dora Dora, near Albury, and Pulletop, near Wagga, in the central-western district at Burra Burra, near Parkes, and in the far west at Poolamacca and Euriowie. The bulk of the yield, however, still comes from the Tingha-Inverell district, the production last year being £170,000 out of a total for the whole State of £256,000.

(ii.) *Victoria.* In Victoria lode tin has been discovered at Mt. Wills, Beechworth, Eldorado, Chiltern, Stanley, and other places in the north-eastern district; and stream tin has been found in a large number of places, including those just mentioned in the north-eastern district. The bulk of the production last year was obtained by dredging and hydraulic sluicing, the chief yields being 39 tons of ore, valued at £4395, raised by the Cock's Pioneer Dredging Company at Beechworth, and 23½ tons, valued at £2597, raised by the Franklin River Hydraulic Sluicing Company at Toora.

(iii.) *Queensland.* The first notable discovery of the metal in Queensland occurred in 1872, when rich deposits of stream tin were found in the country to the south of Warwick and on the borders of New South Wales. This district proved to be surprisingly rich, the value of the metal raised there during the five years subsequent to its discovery being £715,000. The alluvial deposits, however, soon became exhausted, and the district at present contributes only a very small proportion of the total production. In 1879 important discoveries were made in the Herbert River district, and the rich Herberton, Walsh, and Tinaroo mineral fields were opened up, further discoveries being shortly after reported on the Russell, Mulgrave, Jordan, and Johnstone. The production in 1906 amounted to 4283 tons, valued at £490,283, more than three-fourths of which were produced by the Walsh and Tinaroo mineral field.

(iii.) *Northern Territory.* Valuable lodes of tin are found in the Northern Territory at West Arm and Bynoe Harbour, and at Horseshoe Creek, south of Pine Creek, but the deposits have not yet been exploited to the extent they deserve.

(iv.) *Western Australia.* Tin was first discovered in Western Australia in the year 1888, and since that date has been found in several widely distant localities in the State —at the head of the Bow and Lennard Rivers, in the Kimberley district; on the Thomas River, Gascoyne goldfield; at Brockman's Soak and the Western Shaw, in the Pilbara district; and at Greenbushes, in the south-western portion of the State. The production of tin for the State during 1906 amounted to 1495 tons, valued at £157,644, to which the Greenbushes field contributed 783 tons, valued at £79,195, and Pilbara 712 tons, valued at £78,449. Lode tin has been discovered at Wodgina, in the Pilbara field, and the deposits are being developed.

(v.) *Tasmania.* Tin mining in Tasmania dates from the year 1871, when the celebrated Mount Bischoff mine was discovered by Mr. James Smith. This mine, which is probably the richest in existence, is worked as an open quarry, and a large proportion of the original hill has been removed in the course of developmental operations. Soon after rich deposits were located in the north-east district by Mr. G. B. Bell, while deposits of stream tin were discovered near St. Helens by Messrs. Wintle and Hunt. Further finds were reported from Flinders and Cape Barren Islands, and in 1875 the metal was discovered at Mount Heemskirk. The total production of Tasmania in 1906 was 4472 tons of ore, valued at £557,266, the largest producer being the Briseis Tin Mines Limited, in the North-East Division, with a return of 1117 tons. The Mount Bischoff mine paid dividends amounting to £63,000, making a total to the end of 1906 of £2,088,000. Operations are being pushed forward at the North-East Dundas and at Mount Heemskirk. At Cox's Bight a fair quantity of alluvial is being obtained.

(vi.) *New Zealand.* In New Zealand tin ore has been found widely distributed among the gravel drifts in the neighbourhood of the Remarkables, in Stewart Island, but the deposits have up to the present not proved sufficiently rich to pay for working.

2. **Value of Tin Produced.**—The development of tin mining is, of course, largely dependent on the price realised for the metal, and, as in the case of copper, the production has been subjected to somewhat violent fluctuations. The table below shews the production in each of the Commonwealth States during the years 1881, 1891, and 1901 to 1906. There is no record of production in New Zealand:—

TIN PRODUCED IN AUSTRALIA, 1881 TO 1906.

State.	Value of Tin Produced in							
	1881.	1891.	1901.	1902.	1903.	1904.	1905.	1906.
	£	£	£	£	£	£	£	£
New South Wales ...	568,795	133,963	76,544	59,593	150,208	188,377	226,110	255,744
Victoria ...	7,334	5,092	4,181	500	2,165	5,190	11,159	11,644
Queensland ...	193,699	116,387	93,723	116,171	243,149	270,276	297,454	490,283
South Australia ...	...	1,938	5,586	6,078	10,773	24,179	23,768	36,907
Western Australia ...	...	10,200	40,000	39,783	55,890	58,817	86,840	157,644
Tasmania ...	375,775	293,170	212,542	237,846	308,594	257,256	368,796	557,266
Commonwealth ...	1,145,603	560,750	432,576	459,971	770,779	804,095	1,014,127	1,509,488

3. **World's Production of Tin.**—According to the "Statist" the world's production of tin during each of the last five years was as follows:—

PRODUCTION OF TIN, VARIOUS COUNTRIES, 1902 TO 1906.

Country.	1902.	1903.	1904.	1905.	1906.
	Tons.	Tons.	Tons.	Tons.	Tons.
Straits Settlements	53,697	55,335	60,680	58,324	58,443
Dutch East Indies	18,875	18,720	14,578	12,675	11,254
Bolivia	9,000	9,200	11,700	12,500	14,700
Cornwall	4,392	4,282	4,132	4,468	4,500
Australia	3,199	4,934	4,846	5,028	6,482
Total	89,163	92,471	95,936	92,995	95,379

The main users of tin are the manufacturers of tin-plates, while it is also required in conjunction with other metals to produce bronze, brass, Britannia metal, pewter, printers' type, and solder. It is stated that the rising tendency of prices during recent years is due to the fact that production has not been commensurate with the demands for consumption, and also in some measure to the fact that for industrial purposes the metal can be replaced by others to a limited extent only.

4. **Prices of Tin.**—The average price of the metal in the London market for years since 1891 was as follows:—

PRICE PER TON OF TIN, 1891 TO 1907.

Year.	Price per Ton.	Year.	Price per Ton.
	£ s. d.		£ s. d.
1891	94 14 7	1904	130 1 5
1901	121 18 8	1905	145 10 6
1902	123 14 2	1906	183 5 0
1903	131 12 11	1907 (Jan. to June)	189 4 7

5. **Employment in Tin Mining.**—The number of persons employed in tin mining during each of the years 1901 to 1906 is shewn below:—

PERSONS ENGAGED IN TIN MINING, 1901 TO 1906.

State.	1901.	1902.	1903.	1904.	1905.	1906.
New South Wales	1,428	1,288	2,502	2,745	2,884	3,795
Victoria	...	...	...	50	50	95
Queensland	1,148	1,467	1,598	2,237	2,936	2,872
South Australia	...	...	...	...	...	...
Western Australia	413	249	294	284	479	890
Tasmania	1,065	1,260	1,331	1,304	1,351	1,659
Commonwealth ...	4,054	4,264	5,725	6,620	7,700	9,311

§ 7. Zinc.

1. **Production of Zinc.**—The production of spelter is practically confined to the Broken Hill district of New South Wales, where zincblende forms one of the chief constituents in the enormous deposits of sulphide ores. In the earlier years of the history of the field the whole of the zinc contents of the ores was lost in smelting operations, but

various systems of concentration were devised, until at the present time a considerable proportion of the zinc contents of the ores is saved. The success of the methods adopted is amply borne out by the figures hereunder, which relate to the production at intervals since 1889:—

Year.	Quantity of Zinc Concentrates Produced.	Value.	Year.	Quantity of Zinc Concentrates Produced.	Value.
	Tons.	£		Tons.	£
1889	97	988	1899	49,879	49,207
1891	219	2,622	1906	103,666	292,806

Prices of spelter rose from £20 19s. per ton in 1903 to £27 1s. in 1906, but towards the end of 1907 there was a fall to £20 10s.

§ 8. Iron.

1. **History.**—(i.) *New South Wales.* The existence of large deposits of iron ore in New South Wales has been known since the early years of the history of the State, but up to the present little has been accomplished in the way of utilising these deposits so as to produce any extensive supply of marketable metal. According to a report furnished by the Government Geologist in 1905, the total quantity of ore available for exploitation is 53,000,000 tons, the deposits at Cadia, near Orange, being computed to contain no less than 39,000,000 tons, of which a large proportion consists of ores capable of yielding a high-grade metal. The aluminous ores at Wingello are estimated to contain 3,000,000 tons, the titaniferous magnetic ores on the Williams and Karuah Rivers nearly 2,000,000 tons, the hematite and brown ores at Carcoar, 3,000,000 tons; while several other districts are capable of supplying over 1,000,000 tons. There are extensive supplies of coal and limestone within reasonable distance of some of the more extensive deposits. The increasing demand for iron and steel manufactures and the enhanced price of the metal, will probably enable the State in the near future to take its place amongst the iron-producing countries of the world. Ironworks were established at Fitzroy, near Mittagong, as far back as 1852, and at Eskbank, near Lithgow, in 1875, but the production of pig iron and manufactures was in neither case considerable. In May, 1907, however, works on a much larger scale were opened at Lithgow, and their success for some time seemed practically assured, since the Government has contracted with them for a supply of rails and other ironwork for a period of seven years. The ironstone to be used in this establishment will be obtained at Carcoar, where the deposit is calculated to yield 2000 tons of ore for a period of twenty-five years. Coke is at present being obtained in large quantities from the South Coast district, but the main supply will come from the Oakey Park Coal Company, while the limestone will be furnished by the Portland Cement Company.

(ii.) *Victoria.* Iron ore has been located at various places in Victoria, particularly at Nowa Nowa, in the Gippsland district, and at Dookie. In his report for 1905 the Secretary for Mines states that without special assistance to the industry there does not seem to be any prospect of the deposits being cheaply worked.

(iii.) *Queensland.* Queensland possesses some extensive deposits of iron ore, which is mined chiefly for fluxing purposes in connection with the reduction of gold and copper ores.

(iv.) *South Australia.* In South Australia iron ore is raised for fluxing purposes only, although the State possesses some rich deposits capable of being mined for an indefinite period. The best known deposit is the Iron Knob, a veritable hill of iron of high percentage about fifty miles from the seaboard of Spencer's Gulf. This property has been leased by the Broken Hill Proprietary Company, the ore being transported to the smelting works at Port Pirie. Rich outcrops of ore have also been located at Leigh's Creek, at Beltana, Mount Serle, and Boolyeroo.

(v.) *Western Australia.* This State has some very rich deposits of iron ore, but owing to their geographical position the most extensive fields at the present time are practically unexploited, the production in the State being confined chiefly to that needed for fluxing purposes. The Murchison field possesses some extensive deposits of high-grade ore.

(vi.) *Tasmania.* The existence of large quantities of iron ore in Tasmania was noted as far back as 1822, when Surveyor-General Evans alluded to the "surprising abundance of iron within a few miles of Launceston." A company known as the Tasmanian Charcoal Iron Company was formed to work these deposits, and commenced operations in June, 1876. Unfortunately, however, the presence of chromium rendered the pig-iron so hard and brittle that the works had to be abandoned. Extensive deposits of specular iron ore are also found in the neighbourhood of the Blythe and Gawler Rivers.

(vii.) *New Zealand.* The deposits of iron ore in the Auckland, Otago, and Nelson districts have up to the present been little utilised.

§ 9. Other Metals.

1. **Aluminium.**—In the form of bauxite or hydrous sesquioxide, aluminium is found in New South Wales at Emmaville, Inverell, and Wingello, its existence being first recognised in 1889. The metal, however, has not yet been manufactured locally.

2. **Antimony.**—This metal is widely distributed in New South Wales, and has been found native at Lucknow, near Orange. Dyscrasite, a silver antimonide, has been found in masses of up to one ton in weight in the Broken Hill lodes. It has also been found at various places in Victoria, chiefly in association with gold. In New Zealand the metal has been found associated with gold and silver in quartz lodes at Puhipuhi. Thames, and Te Aroha, in the Auckland district, and at Reefton, Langdons, and the west coast of Middle Island, as well as at several localities in the Otago district. An extensive lode was at one time worked at Endeavour Inlet, and a good sulphide lode at Collingwood. Extensive deposits were discovered at Neerdie, in the Wide Bay district of Queensland, during 1872, also at Wolfram Camp on the Hodgkisson field, on the Palmer River, and in the Ravenswood district. In 1906 the yield from the Hodgkisson mines was valued at £5600, while ore to the value of £529 was raised at Ravenswood. In Western Australia good lodes of stibnite, carrying gold, have been found in the Roebume district.

3. **Arsenic.**—In the form of arsenopyrite, arsenic is of wide distribution in Victoria, but the deposits are worked to a limited extent only. At Ballarat a small quantity of the oxide is obtained from the flues of roasting furnaces.

4. **Bismuth.**—This metal has been found in New South Wales at Kingsgate, near Glen Innes, and Whipstick, near Pambula, its discovery dating from 1877. About twenty-five tons of metal and ore were exported during 1906, the bulk of the product being obtained in the Pambula district. In Queensland the metal is found on the Hodgkisson goldfield, at Ukalunda in the Ravenswood district, and at Biggenden in the Burnett district. In South Australia deposits are found at Balhannah, at Mount MacDonald, and at Winnininnie, on the shores of Spencer's Gulf.

5. **Chromium.**—In New South Wales chromium is found at Bowling Alley Point, on the Peel River, and also near Coolac, but the quantity raised at present is insignificant. The metal is also found in the Nelson district in New Zealand.

6. **Carnotite.**—A discovery of carnotite ore was made twenty miles from the Olary railway station in South Australia, and steps are being taken to test its value commercially.

7. **Cobalt.**—This metal was found at Carcoar in New South Wales in 1888, and subsequently at Bungonia, Port Macquarie, and various other places. Deposits have been noted in South Australia at Blinman, in Western Australia at Norseman and Kanowna, and at various places in Victoria.

8. **Lead.**—This metal was first noted in New South Wales in 1849, when small specimens of native metal were found by the Rev. W. B. Clarke. At present lead-mining *per se* is not practised to any extent in the Commonwealth, the supply of the metal being chiefly obtained in conjunction with silver. In Victoria oxides, sulphides, and carbonates of lead are found in the reefs of most of the goldfields. The deposits are not, however, of sufficient extent to repay the cost of working. In Queensland the deposits are worked chiefly for the silver contents of the ore. Galena is found in several districts in New Zealand, but is not worked to any extent.

9. **Mercury.**—In New South Wales mercury was first recorded by the Rev. W. B. Clarke in 1843. Cinnabar has been found in lodes and impregnations at various places, such as Bingara, Clarence River, etc. Up to the present the production of quicksilver has been small, the total being only a little over 1000 lbs. Lodes of cinnabar have been found in Queensland at Kilkivan, and at Black Snake, in the Wide Bay district, about four tons were produced between 1874 and 1891. In New Zealand cinnabar has been located at Waipori, Waitahuna, Puhipuhi, Te Aroha, and Ohaeawai.

10. **Manganese.**—Ores of this metal occur in considerable quantity in widely separated districts in New South Wales, but the low price of the metal precludes mining to any great extent, and the production to date has been trifling. In Queensland there are extensive deposits at Gladstone, the product being utilised chiefly by the Mount Morgan mine. The production from the Mount Miller mine amounted in 1906 to 113 tons of ore, valued at £4391. Extensive deposits of the ore were mined at Boolcunda in South Australia some years ago, but latterly the production has ceased. In Western Australia ores of the metal are found widely scattered, the black oxide being especially plentiful in the Kimberley district. In New Zealand deposits are found in various localities, but little has been done in the way of exploration.

11. **Tungsten.**—Wolfram and scheelite, the principal ores of tungsten, are both mined to a small extent in New South Wales. During 1906 the export of wolfram was 132 tons, valued at £9000, and of scheelite 109 tons valued at £7600. Wolfram was mined chiefly at Torrington, Emmaville, and Wagga, and scheelite at Hillgrove. In Queensland Wolfram and molybdenum are both obtained on the Hodgkisson goldfield, and at Kangaroo Hills and Port Douglas. Mines in the Townsville district are reputed to have produced twenty-seven tons of wolfram last year. Wolfram is mined in Tasmania at Ben Lomond and in the Middlesex district, the quantity exported in 1906 being twenty tons, valued at £1465. Rich deposits of scheelite have been found in New Zealand, where it is mined principally at Macrae's Flat, Otago, and Top Valley, Marlborough. Over £24,000 worth have been raised at Macrae's Flat alone.

12. **Tantalum.**—Tantalite in small quantities has been found in the Greenbushes tinfield for some time past, but recently a lode of fairly extensive proportions was located at the Wodgina tinfield. Up to the end of 1905 the production of this mineral amounted to 73 tons, valued at about £10,000, but early in 1906 it was found that the supply exceeded the demand and production was temporarily stopped.

In addition to the metals enumerated above there is a large number of others occuring in greater or less degree, while fresh discoveries are being constantly reported.

NON-METALLIC MINERALS (B).

§. 10 Coal.

1. **Historical.**—Coal was discovered at a very early period in the history of Australia, the first mention of it dating from August, 1797, when its existence was noted in New South Wales by some survivors from the wreck of a vessel, who had walked from the southern portion of Australia up the coast to Sydney. The discovery was shortly afterwards confirmed by Surgeon Bass, who found coal in the cliffs southward of Point Solander, but the locality was at the time looked upon as so inaccessible that no attempt was made to utilise the deposits. During 1906, however, the South Coast district, in which the site of these discoveries occurs, produced over 1,780,000 tons of coal. In 1797 coal was also discovered at the mouth of the Hunter (or Coal) River by Lieutenant Shortland, and in this case, the deposits being more easily worked, it was not long before they were utilised, and a township sprang up which is now the port of one of the greatest coalfields in the world. The production for the northern district, of which Newcastle is the port, amounted in 1906 to 5,336,000 tons, valued at £1,718,000.

The discovery of coal in *Victoria* dates from the year 1825, when the mineral is reported to have been found at Cape Patterson. There is no record of production in the earlier years, but it is stated that the first Victorian coal placed on the Melbourne market came from Kilcunda in the vicinity of the original discovery. Up to 1889, with the exception of a little work by the companies at Moe and Narran, the industry languished, the total production to the beginning of the year named being only about 25,000 tons. Early in 1889 the Government determined to come to the assistance of the industry, and the Coal Creek Company at Korumburra was registered, followed during next year by the Jumbunna Company, and the Outtrim, Howitt, and British Consolidated in 1894. The unfortunate strike of 1903 completely disorganised coal mining in Victoria, and the industry still suffers from its disastrous effects.

The existence of coal in *Queensland* was known soon after the establishment of the first settlement at Moreton Bay, mines near Ipswich, on the banks of the Bremer Creek and Brisbane River, having been worked almost continuously since that date. Seams in the Wide Bay district have been operated on since 1870, while good coal was mined at Clermont shortly after the establishment of the copper mines in that locality.

In *South Australia* a seam of coal was discovered in 1890 at Leigh's Creek, but up to the present the product has not been utilised to any great extent. The discovery of coal in *Western Australia* dates from 1846, when the mineral was found on the Murray River. Since that year coal has been met with in other localities, but production at the present time is confined to the deposits at the Collie River. In *Tasmania* coal was discovered between the Don and Mersey Rivers in 1850. The value of the deposits at Fingal was first proved in 1863, two tons of this coal producing nearly 14,000 feet of gas. The first official record of production in *New Zealand* dates from the year 1878, when about 160,000 tons were raised.

2. **Production of Coal.**—The production of coal in each State and New Zealand at various periods since 1881, and the *value* of such production are shewn in the following table:—

As the table shews, the great bulk of the production is confined to New South Wales, although New Zealand has been steadily increasing its output during the last few years.

PRODUCTION OF COAL, AUSTRALASIA, 1881 TO 1906.

State.	1881.	1891.	1901.	1902.	1903.	1904.	1905.	1906.
QUANTITY.								
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
New South Wales ...	1,769,597	4,037,929	5,968,426	5,942,011	6,354,846	6,019,809	6,632,138	7,626,362
Victoria	...	22,834	209,329	225,164	64,200	121,742	155,136	160,631
Queensland ...	65,612	271,603	539,472	501,531	507,801	512,015	529,326	606,772
South Australia ...	...	...	...	...	...	...	...	...
Western Australia	...	...	117,836	140,884	133,427	138,550	127,364	149,755
Tasmania	11,163	43,256	45,438	48,863	49,069	61,109	51,993	52,896
Commonwealth ...	1,846,372	4,375,622	6,880,501	6,858,453	7,109,343	6,853,225	7,495,957	8,596,416
New Zealand ...	337,262	668,794	1,227,638	1,362,702	1,420,193	1,537,838	1,585,756	1,729,536
VALUE.								
	£	£	£	£	£	£	£	£
New South Wales ...	603,248	1,742,796	2,178,929	2,206,598	2,319,660	1,994,952	2,003,461	2,337,227
Victoria	...	19,731	147,228	155,850	43,645	70,208	79,060	80,283
Queensland ...	29,033	128,198	189,877	172,286	164,798	166,536	155,477	173,282
South Australia ...	...	...	...	...	...	...	...	...
Western Australia	...	...	68,561	86,188	69,128	67,174	55,312	57,998
Tasmania	4,465	17,303	18,175	19,546	19,628	24,444	20,797	21,158
Commonwealth ...	636,746	1,908,028	2,602,770	2,640,468	2,616,859	2,323,314	2,314,107	2,669,948
New Zealand ...	* 168,631	* 334,397	676,174	741,759	762,858	826,207	838,531	916,562

* Estimated.

3. **Distribution and Quality of Coal in Each State.**—(i.) *New South Wales.* Estimates have from time to time been made as to the total quantity of coal available for working in the deposits in New South Wales, and while these naturally differ to some extent, they agree in placing the amount at well over a thousand million tons, without taking into consideration the deposits existing below a depth of 4000 feet. According to Mr. E. F. Pittman, the coal-bearing rocks of New South Wales may be classified as follows:—

COAL-BEARING ROCKS OF NEW SOUTH WALES.

Geological Age.	Maximum Thickness of Coal-bearing Strata.	Locality.	Character of Coal.
I. Tertiary—Eocene to Pliocene ...	Approx. 100 ft.	Kiandra, Gulgong, and Chouta Bay	Brown coal or lignite.
II. Mesozoic—Triassic	2,500 ,,	Clarence and Richmond Rivers	Coal suitable for local use only.
III. Palæozoic—Permo-Carboniferous	13,000 ,,	Northern, Southern and Western Coalfields	Good coal, suitable for gas, household and steaming.
IV. Palæozoic—Carboniferous ...	10,000 ,,	Stroud	Very inferior.

No serious attempt has been made to use the deposits of brown coal or lignite as a source of fuel. The Triassic deposits in the Clarence and Richmond districts contain numerous seams, but the coal is largely intersected by bands, while its large percentage of ash renders it unfit for use as fuel for industrial purposes. Probably these beds extend under the great western plains, but the presence of artesian water precludes the possibility of their being worked. It is in the Permo-Carboniferous division that the great productive coal seams of the State are found, the area which they cover being estimated at about 25,000 square miles. The coal from the various districts embraced in this division differs considerably in quality—that from the Newcastle district being especially suitable for gas-making and household purposes, while the product of the

Southern (Illawarra) and Western (Lithgow) is an excellent steaming coal. The Permo-Carboniferous measures have in various places been disturbed by intrusions of volcanic rocks, which in some instances have completely cindered the seams in close proximity to the intrusive masses, while in other instances the coal has been turned into a natural coke, some of which has realised good prices as fuel.

The quantity and value of the coal raised in each district during the years 1881, 1891, and 1906 will be seen in the following table :—

COAL RAISED IN NEW SOUTH WALES, 1881 TO 1906.

District.	1881.		1901.		1906.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Tons.	£	Tons.	£	Tons.	£
Northern ...	2,243,792	1,096,720	3,999,252	1,669,519	5,336,188	1,718,178
Southern ...	376,568	170,684	1,544,454	407,196	1,783,395	494,871
Western ...	302,137	79,036	424,720	102,214	506,779	124,178
Total ...	2,922,497	1,346,440	5,968,426	2,178,929	7,626,362	2,337,227

So far back as 1847 the Rev. W. B. Clarke expressed the belief that workable coal would be found in the strata below Sydney, a belief that was also held by subsequent geologists, who based their contentions on stratigraphical and palæontological evidence. The later geologists urged that the Illawarra coal measures of the South Coast district were identical with the Newcastle measures of the Northern district, although it was agreed that the deposits in the neighbourhood of Sydney would probably be found at a considerable depth. Borings were made in several localities close to Sydney, and in 1891 a drill put down at Cremorne Point in Sydney Harbour passed through a seam of coal seven feet four inches thick and at a depth of 2801 feet. Unfortunately the site of the bore happened to be in the vicinity of a volcanic dyke, which had cindered the coal near the locality of its intrusion. A second bore was commenced in July, 1892, and in November, 1893, a seam of excellent coal, ten feet three inches thick, was reached at 2917 feet. The results attained led to the formation of a company which acquired land at Balmain, and expended a considerable sum of money in the purchase of plant suitable for working coal at such a great depth. Sinking operations were commenced in June, 1897, and coal was struck at a depth of 2880 feet on the 21st November, 1901. Up to the present developmental work has not sufficiently advanced to permit of any considerable production.

(ii.) *Victoria.* The deposits of black coal in Victoria occur in the Jurassic system, the workable seams, of a thickness ranging from two feet three inches to six feet, being all in the Southern Gippsland district. The coal is of excellent quality for steaming and household purposes. The full exploitation of the Victorian coal deposits has, however, been rather severely hindered by various obstacles. In the Report of the Royal Commission on the Coal Industry, 1906, these have been summarised as follows :—(1) Labour troubles. (2) Difficulties of working arising from faults, displacements, and thin seams. (3) Increased cost of production as the workings extend. (4) The low price ruling for coal.

Deposits of brown coal and lignite of immense extent occur in gravels, sands, and clays of the Cainozoic period throughout Gippsland, Mornington Peninsula, Werribee Plains, Gellibrand, and Barwon and Moorabool basins. In the Latrobe Valley the beds reach a thickness of over 800 feet. When dried, the material makes good fuel, but owing to its excessive combustibility and friability requires to be consumed in specially constructed grates. Attempts have been made to manufacture briquettes from the brown coal but so far without any great measure of success.

The output of coal from the chief Victorian collieries during the last six years was as follows :—

PRODUCTION OF COAL IN VICTORIA, 1901 TO 1906.

Year.	Outtrim Howitt Company.	Jumbunna Coal Company.	Coal Creek Proprietary.	Silkstone Co-operative Company.	Other Companies.	Total Production.	Value.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	£
1901	118,168	60,237	30,924	...	...	209,329	147,191
1902	114,686	67,876	39,257	2,257	1,088	225,164	155,850
1903	20,602	18,517	20,727	4,354	5,661	69,861	43,645
1904	57,328	39,364	22,547	2,014	489	121,741	70,208
1905	71,989	49,009	27,710	1,624	4,804	155,136	79,035
1906	74,812	64,222	13,214	3,977	4,406	160,631	80,283

The figures for 1903 include 5661 tons of brown coal.

The coal from Leigh's Creek in South Australia is subject to similar disabilities as the Victorian brown coal, and until some means are devised of overcoming these production will necessarily languish.

(iii.) *Queensland.* In Queensland the coal-bearing strata are of vast extent and wide distribution, being noted under the greater portion of the South-eastern districts, within 200 miles of the sea, as far north as Cooktown, and under portions of the far western interior. The Ipswich beds are estimated to occupy about 12,000 square miles of country, while the Burrum fields occupy a considerably larger area. At Callide, fifty miles west of Gladstone, a seam of coal free from bands has been struck in a shaft only sixty feet deep, and borings have proved the deposit to be of considerable magnitude. Extensive beds occur in the basin of the Fitzroy River, in the Broadsound district, and at the Bowen River. Amongst other places where the mineral is found may be enumerated Clermont, the Palmer River, Tambo, Winton, and the Flinders River. Little of the product has been exported, the Ipswich coal, though excellent for most purposes, being too friable. A bituminous coal is yielded by the Ipswich seams, those of the Darling Downs yield a cannel, while anthracite of good quality is furnished by the Dawson River beds.

The quantity and value of coal raised in Queensland at various periods since 1861 were as shewn below :—

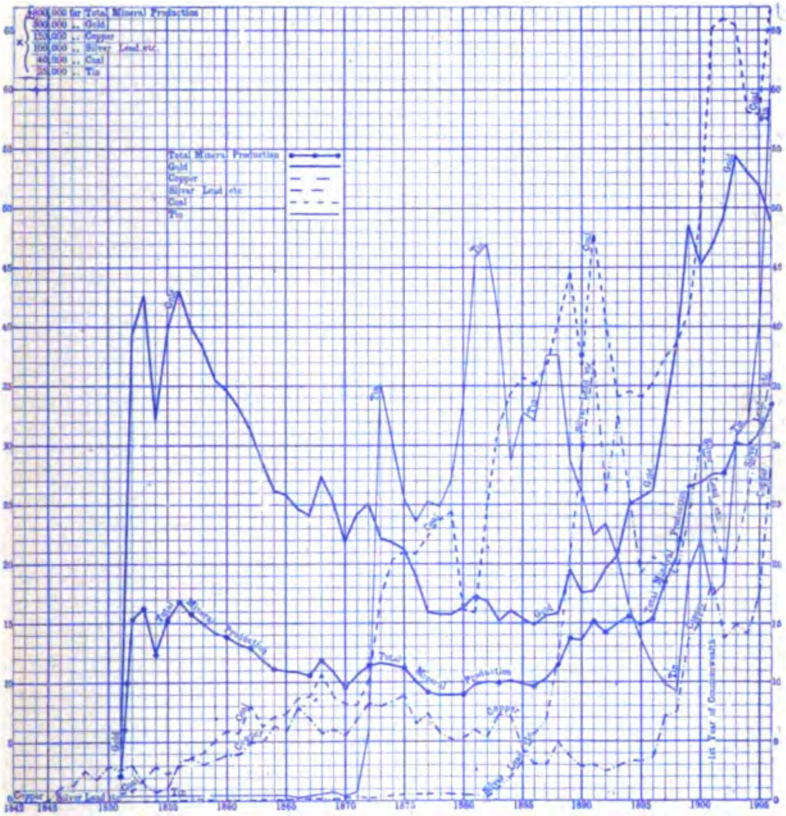
PRODUCTION OF COAL IN QUEENSLAND, 1861 TO 1906.

Year	1861.	1871.	1881.	1891.	1901.	1906.
Quantity ... Tons	14,212	17,000	65,612	271,603	539,472	606,772
Value ... £	9,922	9,407	29,033	128,198	189,877	173,282

At present the industry is feeling the effects of contracts entered into some years back during a period of depression, but with the probability of higher prices at no distant date, and the reduction in haulage rates conceded by the railway authorities, it is believed that an era of increasing prosperity will shortly manifest itself.

(iv.) *Western Australia.* The coal seams in Western Australia belong to the Carboniferous, Mesozoic, and Post-tertiary ages. Most of the coal contains a large proportion of moisture, and belongs partly to the hydrous bituminous and partly to the lignite class. The only coalfield at present worked is at Collie, in the Mesozoic beds of the south-west. The coal produced is bright and clean, but very fragile when free from moisture. The production from this field during the last six years was as follows :—

GRAPHS SHEWING VALUES OF PRINCIPAL MINERALS PRODUCED IN THE COMMONWEALTH, 1842-1906.



Explanation of Graphs.—The values shewn in the above diagrams are those of the total Commonwealth production of the most important minerals in successive years from 1842 to 1906.

The base of each small square represents an interval of one year, and the vertical height represents, in the case of gold, £300,000; copper, £120,000; silver, lead, etc., £100,000; coal, £40,000; tin, £25,000; and total mineral production, £800,000.

The names of the various minerals are written on the graphs which respectively represent them, and the distinctive types of line used are exhibited in detail in the upper portion of the diagram.

PRODUCTION OF COAL IN WESTERN AUSTRALIA, 1901 TO 1906.

Year	1901.	1902.	1903.	1904.	1905.	1906.
Quantity Tons	117,836	140,884	133,427	138,550	127,364	149,755
Value ... £	68,561	86,188	69,128	67,174	55,812	57,998

(v.) *Tasmania.* In Tasmania coal occurs in the Carboniferous and Mesozoic systems, the product of the former class being, however, far inferior to that of the latter. Carboniferous seams occur at the Don, Tarleton, Latrobe, Port Cygnet, Tippagory Range, St. Mary's, and Adventure Bay, the seam at Port Cygnet having a thickness of two feet and being of fair quality. The Mesozoic coal measures are well developed in the Fingal basin, the Cornwall coal from this locality being excellent for household purposes. The chief production of recent years has been furnished by the Mt. Nicholas and Cornwall mines, but it is hoped that ere long the production from the Sandfly mine will assume considerable proportions. The quantity of coal raised during the last six years in the various districts was as follows:—

PRODUCTION OF COAL IN TASMANIA, 1901 TO 1906.

District.	1901.	1902.	1903.	1904.	1905.	1906.
	Tons.	Tons.	Tons	Tons.	Tons.	Tons.
North-western ...	2,952	1,683	1,735	2,282	1,261	1,878
North-eastern (Fingal)...	40,977	42,770	45,893	55,070	45,179	46,802
Midland	1,536	725	1,047	940	200	393
South-eastern ...	...	60	30	200	200	1,483
South-western ...	3,711	4,660	3,100	3,120	3,624	2,339
Total	49,176	49,898	51,805	61,612	50,464	52,895

(vi.) *New Zealand.* New Zealand possesses coal measures of vast extent and great wealth, but as yet in a comparatively undeveloped state through lack of efficient shipping facilities on the coasts adjacent to the site of the chief deposits. The greater portion of the coal produced is of the bituminous or semi-bituminous character, but considerable quantities of brown coal and lignite are mined, and there is a small production of pitch coal. Bituminous coals are most largely mined on the west coast of the Middle Island, while the Southern district yields the chief production of brown coal, lignite, and pitch coal. Competent judges have pronounced the bituminous coals of the West Coast to be equal, if not superior, to the best description from any part of the world. Large quantities of Westport coal are supplied to the warships on the Australian Naval Station. The output of coal from the chief districts during each of the last six years was as follows:—

PRODUCTION OF COAL IN NEW ZEALAND, 1901 TO 1906.

District	1901.	1902.	1903.	1904.	1905.	1906.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Northern ...	175,084	192,045	209,795	242,517	259,876	301,186
West Coast ...	669,535	753,816	781,032	836,950	856,227	962,915
Southern ...	395,067	419,179	429,402	458,371	469,653	465,435
Total ...	1,239,686	1,365,040	1,420,229	1,537,838	1,585,756	1,729,536

Two collieries in New Zealand, situated at Seddonville and Port Elizabeth, are owned by the State. The aggregate amount of coal dealt with during 1906 was 196,509 tons, valued at £158,097. Depôts for the sale and distribution of State coal were opened during the year at Wellington, Christchurch, and Wanganui. For the year ended 31st March, 1907, the profits of the mines amounted to £8461. A briquette factory has been established in connection with the Seddonville State Colliery, and is manufacturing a product of first-rate quality.

6. **Production of Coal in Various Countries.**—The world's production of coal during the last three years for which figures are available averaged 810 million tons, the output in 1905 being 840 million tons. The following table shews the production of the British Empire and the chief foreign countries in units of 1000 tons during each year of the period 1901-5:—

BRITISH EMPIRE.

Year.	United Kingdom.	British India.	Canada.	Australian C'wealth.	New Zealand.	South Africa.
	1000 tons.	1000 tons.	1000 tons.	1000 tons.	1000 tons.	1000 tons.
1901... ...	219,047	6,636	5,560	6,884	1,228	1,465
1902... ...	227,095	7,424	6,422	6,860	1,363	2,179
1903... ...	230,334	7,438	6,825	7,112	1,420	2,911
1904... ...	232,428	8,217	6,705	6,854	1,538	3,163
1905... ...	236,129	8,425	7,836	7,496	1,586	3,603

FOREIGN COUNTRIES.

Year.	Russian Empire.	Sweden.	German Empire.	Belgium.	France.	Spain.	Austria-Hungary.	Japan.	United States.
	1000 tons.	1000 tons.	1000 tons.	1000 tons.	1000 tons.	1000 tons.	1000 tons.	1000 tons.	1000 tons.
1901 ...	16,215	268	106,795	21,856	31,126	2,609	12,895	8,885	261,875
1902 ...	16,156	300	105,747	23,493	28,893	2,679	12,012	9,589	269,277
1903 ...	17,532	315	114,763	23,415	33,368	2,654	12,526	9,979	319,068
1904 ...	19,007	316	118,874	22,395	32,964	2,974	12,813	10,602	314,563
1905 ...	16,957	317	119,349	21,506	34,778	3,152	13,530	11,630	350,821

Including New Zealand the production from Australasia takes first place amongst the possessions of the British Empire.

7. **Export of Coal.**—(i.) *New South Wales.* The exports of coal from Australasia are confined to New South Wales and New Zealand, the quantity sent away from the latter being comparatively small. In the following table will be found the quantity and value of the exports at decennial intervals since 1881 and during the last five years, the figures for New South Wales being given on the authority of the Mines Department of that State:—

EXPORTS OF AUSTRALASIAN COAL, 1881-1906.

Year.	Exports from New South Wales.		Exports from New Zealand.	
	Quantity.	Value.	Quantity.	Value.
	Tons.	£	Tons.	£
1881 ...	1,029,844	417,530	6,621	5,610
1891 ...	2,514,368	1,306,630	91,664	91,173
1901 ...	3,470,985	1,681,824	159,643	142,176
1902 ...	3,261,459	1,625,380	188,677	154,747
1903 ...	3,716,194	1,704,993	152,332	128,927
1904 ...	3,172,867	1,380,839	165,220	139,898
1905 ...	3,718,053	1,483,978	122,817	107,062
1906 ...	4,961,540	2,080,600	141,641	122,614

The principal countries to which coal was exported from New South Wales during the year 1906 were as shewn hereunder:—

DESTINATION OF NEW SOUTH WALES COAL, 1906.

Country.	Quantity.	Value.	Country.	Quantity.	Value.
	Tons.	£		Tons.	£
Victoria	904,161	467,126	New Zealand ...	215,503	91,010
South Australia ...	506,624	281,039	Peru	109,278	47,926
Chile	601,044	266,878	Hawaii... ...	90,635	37,708
Philippine Islands...	312,996	132,984	United States ...	83,511	36,032
Straits Settlements	215,762	96,073	China	71,794	31,652

The quantity of bunker coal taken by oversea vessels exceeded 1,000,000 tons, and was valued at £447,000.

(ii.) *New Zealand.* New Zealand's export consisted principally of bunker coal used on vessels trading to the United Kingdom, the amount so credited in the export returns being 80,013 tons, valued at £78,328. In addition there was an export of 25,000 tons, valued at £19,800, sent to New South Wales, the bulk of this being coal for use in British warships on the Australian station. Of the remainder the South Sea Islands took 7700 tons, valued at £4282, and Fiji 9600 tons, valued at £5659.

8. **Price of Coal.**—(i.) *New South Wales.* The price of coal in New South Wales has been subject to considerable fluctuation since the date of first production. Up to the end of 1857 the average value of the total output was 11s. 10d. per ton. Next year the value had risen to nearly 15s., declining thereafter until in 1871 the price realised was 7s. From 1872 to 1879 there was a rise in value to 12s. Between 1882 and 1891 the price ranged between 8s. and 10s. From 1891 onwards there was a steady decline until 1898, when the average was 5s. 4d. Henceforward prices rose again until 1902, when 7s. 5d. was the average. A further decline then set in until 1905, when the price stood at a little over six shillings followed by a rise of one penny in 1906. The price of New South Wales coal depends on the district from which it is obtained, the northern (Newcastle) coal always realising a much higher rate than the southern or western product. The average rate in each district during the last six years was as follows:—

PRICE OF COAL IN NEW SOUTH WALES (PER TON), 1901 TO 1906.

Year.	Northern District.	Southern District.	Western District.
	s. d.	s. d.	s. d.
1901	8 4.19	5 3.28	4 9.76
1902	8 4.49	5 9.33	5 0.73
1903	8 1.04	5 8.12	5 0.14
1904	7 2.10	5 7.25	5 1.91
1905	6 4.15	5 5.03	5 0.15
1906	6 5.28	5 6.60	4 10.81

(ii.) *Victoria.* In Victoria the average price of coal up to the 31st December, 1890, was nineteen shillings and threepence per ton. In 1895 the price was still as high as twelve shillings and twopence, but in the following five years there was a serious decline, the value in 1900 being quoted at nine shillings and sevenpence per ton. In 1901, however, there was an astonishing rise, the figure being as high as fourteen shillings and sevenpence. Since that year, however, the price again declined, the average for 1905 being ten shillings and twopence, and for 1906, ten shillings.

(iii.) *Queensland.* The average price of coal at the pit's mouth in Queensland during the period 1900-06 ranged from five shillings and eightpence halfpenny in 1906 to seven shillings in 1901. Prices in the principal coal producing districts during the last two years were as follows:—

PRICES OF COAL, QUEENSLAND (PER TON), 1905 TO 1906.

District.	Output—Tons.		Value at Pit's Mouth.	
	1905.	1906.	1905.	1906.
	Tons.	Tons.	s. d.	s. d.
Ipswich and Darling Downs	422,642	509,989	5 4	5 2½
Wide Bay and Maryborough	98,594	86,634	7 8½	8 0¾
Rockhampton and Central	8,090	10,079	12 0	11 2½

(iv.) *Western Australia.* The average price of the Collie (Western Australia) coal up to the end of 1901 was nine shillings and fourpence per ton, the price in 1901 being eleven shillings and sevenpence. In 1902 the average stood at twelve shillings and threepence, but since that time there has been a steady fall, the lowest point being reached in 1906, when the price was seven shillings and sevenpence halfpenny per ton.

(v.) *Tasmania.* The average price per ton of coal at the pit's mouth in Tasmania was eight shillings in 1901. In 1902 it was eight shillings and sevenpence, in 1903 eight shillings and ninepence, in 1904 nine shillings and eightpence, in 1905 nine shillings and eightpence, and in 1906 nine shillings and ninepence per ton.

9. **Price of Coal in Other Countries.**—According to a report published by the Board of Trade the average value of coal at the pit's mouth in the five principal coal-producing countries of the world, for the three years ended 1905, was as follows:—

PRICE OF FOREIGN COAL.

Year.	United Kingdom.	Germany.	France.	Belgium.	United States.
	Per ton. s. d.	Per ton. s. d.	Per ton. s. d.	Per ton. s. d.	Per ton. s. d.
1903 ...	7 8	8 9	11 5½	10 6¾	6 7
1904 ...	7 2½	8 8¼	10 10⅓	10 8	5 10¾
1905 ...	6 11½	8 9½	...	...	5 8

A consideration of the above and preceding figures will shew that throughout the world the price of coal has, generally speaking, undergone a considerable decline during the last few years, although the latest returns shew an upward tendency.

10. **Employment in Coal Mining.**—The number of persons employed in coal mining in each of the States and New Zealand during the year 1906 is shewn below. The table also shews the number of persons killed and injured, with the proportion per 1000 employed, while further columns are added shewing the quantity of coal raised for each person killed and injured, this being a factor which must be reckoned with in any consideration of the degree of risk attending mining operations:—

Returns published by the Board of Trade, England, give the total known number of persons engaged in mining and quarrying throughout the world as about 5,000,000, more than one-half of whom were employed in coal mining, the number in Great Britain being 833,000; the United States, 594,000; Germany, 543,000; France, 171,000; Belgium, 138,000; Austria, 119,000; and India, nearly 93,000.

The latest returns shew the death rate in the United Kingdom as 1.24, and for the British Empire 1.25 per 1000 persons employed in coal mines. For France the rate is given as 1.07, for Germany 1.90, and the United States 3.35. For foreign countries generally the rate is stated at 2.20 per 1000.

EMPLOYMENT AND ACCIDENTS IN COAL MINING, 1906.

State.	Persons Employed in Coal Mining.	No. of Persons		Proportion per 1000 Employed		Tons of Coal Raised for Each Person	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
New South Wales ...	15,199	21	72	1.4	4.7	365,000	106,000
Victoria	693	...	5	...	6.9	...	32,000
Queensland ...	1,349	...	25	...	18.6	...	24,000
South Australia ...	...	...	...	...	...	...	...
Western Australia ...	307	...	32	...	100.4	...	5,000
Tasmania ...	209	...	1	...	4.8	...	53,000
Commonwealth ...	17,757	21	135	1.2	7.6	409,000	64,000
New Zealand ...	3,692	6	30	1.6	8.1	288,000	58,000

THE AVERAGE FOR THE LAST SIX YEARS AVAILABLE IS GIVEN BELOW:—

State.	Persons Employed in Coal Mining.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
New South Wales ...	16,626	21	90	1.3	5.4	390,000	85,000
Victoria	896	2	12	2.2	13.4	94,000	16,000
Queensland ...	1,609	1	20	1.0	12.4	799,000	32,000
South Australia ...	...	...	...	...	...	...	...
Western Australia[1]	433	...	12	...	27.7	808,000	13,000
Tasmania ...	226	...	2	...	8.8	...	44,000
Commonwealth ...	19,790	24	136	1.2	6.8	368,000	65,000
New Zealand ...	3,748	4	18	1.1	4.8	355,000	82,000

1. One man was killed in 1903.

§ 11. Coke.

1. **Production of Coke.**—Notwithstanding the large deposits of excellent coal in Australia there is at the present time a fairly considerable amount of coke imported from abroad, the oversea imports during the three years ended 1906 amounting to about 16,000 tons, valued at £7600, the bulk of which came from the United Kingdom and Germany. Various reasons were adduced to account for the rejection of the local article, such as excessive friability in transport, lack of strength to sustain the weight of large ore bodies in reduction works, excessive amount of ash, etc. It is believed, however, that in a great many instances these disabilities have been overcome, so that succeeding years should see a more extensive local production. The quantity of coke made in New South Wales during the last six years was as follows:—

COKE MADE IN NEW SOUTH WALES.

Year	1901.	1902.	1903.	1904.	1905.	1906.
Quantity Tons	128,882	126,872	160,592	171,006	162,961	186,060
Value ... £	105,665	89,605	108,764	110,692	100,306	110,607

A small quantity of coke is made in Queensland, but the bulk of that used in ore reduction is imported, mainly from New South Wales. The coke manufactured locally amounted in 1905 to 8650, and in 1906 to 8672 tons, while the imports for the same years came to 9823 and 22,661 tons respectively.

New Zealand formerly produced a fair amount of coke, the records for 1892 shewing an export of local produce amounting to over 4000 tons, valued at £5700. The production has, however, dwindled away, and from 1900 to 1906 there was a continuous rise in imports, ranging from 963 tons, valued at £2451, to 3506 tons, valued at £6778.

§ 12. Kerosene Shale and Mineral Oils.

1. **Production of Shale.**—As pointed out by Mr. E. F. Pittman, the name kerosene shale has been rather inaptly applied to a variety of torbanite, cannel, or boghead mineral found at various geological horizons in New South Wales. The mineral does not, as a rule, split in parallel layers, the fracture being rather of a conchoidal type. Pure samples have been found to contain over 89 per cent. of volatile hydro-carbons and over 5 per cent. of fixed carbons. The discovery of the mineral in New South Wales dates probably from 1827, although the first authentic mention by a scientific observer dates from 1845, when its occurrence in the Hartley Vale district was noted by Count Strzelecki. The mineral has been found at several places in the Upper Coal Measures, and in at least two in the Lower Carboniferous. Production on anything like a large scale commenced in 1868, when about 17,000 tons, valued at £48,000, were raised. The production in 1906 amounted to 32,000 tons, valued at £28,470, the whole of it being raised in the mines controlled by the Commonwealth Oil Corporation Limited at Hartley Vale, New Hartley, and Wolgan. Up to the end of 1906 the entire production for the State amounted to 1,280,000 tons, valued at £2,135,000.

2. **Production of Mineral Oil.**—Mineral oil has been known to exist for some years in New Zealand in the locality of New Plymouth, and also near Gisborne and the East Cape, while small quantities are at times noticeable on hot pools in the volcanic district. Bores put down near New Plymouth reached oil at a depth of 2300 ft., but great difficulty has been experienced in keeping the bore hole free from water.

§ 13. Other Non-metallic Minerals.

1. **Alunite.**—Probably the most remarkable deposit of alunite in the world occurs at Bullahdelah, in the county of Gloucester, New South Wales, a large proportion of a low range of mountains in the district being composed of this mineral. The deposits are worked by quarrying, and up to the end of 1906 about 27,000 tons had been raised, valued at £82,600, the production for the year 1906 being 1856 tons, valued at £4637.

2. **Asbestos.**—This substance has been found in various parts of Australia, but up to the present has not been produced in sufficient quantity to warrant special notice. In Western Australia what may prove to be a valuable deposit of the fibrous chrysotile variety has been located at Tambourah, on the West Pilbara goldfield. In 1899 Tasmania raised 200 tons, valued at £363, but there has been no production during the last six years.

3. **Graphite.**—Graphite is found in New South Wales near Undercliff Station, in the county of Buller, but the deposit is not sufficiently pure to prove remunerative. In Victoria the mineral occurs in Ordovician slates in several of the goldfields, but is not worked. In Queensland the mineral is raised by the Graphite Plumbago Company at Mt. Bopple, near Netherby, on the Maryborough-Gympie line. The quantity produced in 1906 was thirty-one tons, valued at £200, and ore valued at £750 was awaiting shipment at the mine. There is an extensive deposit of the mineral at Mt. Bopple, but the quality is rather inferior.

4. **Tripolite, or Diatomaceous Earth.**—Although at Barraba, Cooma, Wyrallah, and in the Warrumbungle Mountains in New South Wales tripolite has been found, the

deposits have not yet been worked commercially. In Victoria there is a remarkably pure deposit at Lillicur, near Talbot, while beds of the mineral are also met with at Clunes and Portland.

5. **Salt.**—Salt is obtained from salt lakes in the western and north-western districts of Victoria, and from salterns in the neighbourhood of Geelong. In Western Australia supplies are obtained from dried-up shallow lakes and consumed locally or exported. The chief centres of production are Rottnest Island, near Fremantle, and Middle Island, near Esperance, the product from the former being a remarkably pure chloride. Large quantities are also obtained from the shallow salt lakes of South Australia.

6. **Natural Manures.**—In Victoria large quantities of "copi," an impure hydrous sulphate of lime, are obtained in the North-western district. South Australia possesses fairly extensive deposits of rock phosphate in the neighbourhood of Kapunda and Angaston. Although it can hardly be considered a mineral product, mention may be made here of the large accumulations of guano on the Abrolhos Islands, off the coast of Western Australia, in the neighbourhood of Geraldton. The deposits vary in thickness from four to twenty-seven inches. During the years 1876-80 over 36,000 tons were raised, no figures being available shewing the production of recent years.

In New Zealand, fairly extensive deposits of phosphates have been located at Clarendon in the Otago district, but the production has not up to the present reached any magnitude.

§ 14. Gems and Gemstones.

1. **Diamonds.**—Diamonds were first noted in New South Wales by E. J. Hargraves in 1851, and in October of the same year by Geological Surveyor Stutchbury. The Cudgegong field was discovered in 1867, and shortly afterwards the Bingara diamantiferous deposits were located. None of the diamonds so far discovered has proved of any considerable size, the largest weighing about 6¼ carats. Stones of small size are also found at Cope's Creek and other places in the Inverell district. It is difficult to obtain accurate returns in connection with the production of precious stones, but the yield of diamonds in 1906 was estimated at 2827 carats, valued at £2120, while the total production to the end of 1906 is given as 157,000 carats, valued at £104,000. Small quantities of diamonds are found in Victoria in the gravels of streams running through granite country in the Beechworth district; at Kongbool, in the Western district; and near Benalla. The stones are generally small, and the production up to date has been trifling. A few small diamonds have been found in the Pilbara district in Western Australia.

2. **Sapphires.**—These gems were discovered in New South Wales in 1851, near Burrandong. The gems have also been found in small quantities near Inverell, and at a few other localities in the State. There is no record of production. Specimens of sapphire have been found in Victoria, but the stones of commercial size are generally of little value owing to flaws.

In Queensland sapphires are found in the gravel of creek beds, between Withersfield and Anakie on the Rockhampton-Winton railway line. The gems show excellent fire and lustre, but the colour is darker blue than the Oriental sapphire. Hyacinths are occasionally found in association with the gems. The production of all gems in Queensland last year was valued at £18,110, and up to the end of 1906 the total was £62,000.

3. **Precious Opal.**—This stone was first discovered in New South Wales at Rocky Bridge Creek on the Abercrombie River, in the year 1877, and later a most important discovery was made at White Cliffs in the Wilcannia district, which is now the centre of production. The total value of opal raised last year was estimated at £56,500, of which £50,000 worth was raised in the White Cliffs district, and the balance at the Wallangulla field in the Walgett division. Since the year 1890 the total value of opal won is estimated at £989,000.

Small quantities of precious opal are also found in the Beechworth district in Victoria. In Queensland, the first recorded discovery of the gem dates from 1890. The opaliferous district stretches over a considerable area of the western interior of the State, from Kynuna and Opalton as far down as Cunnamulla. The yield in 1906 was estimated at £8000, and up to the end of that year at £156,000. These figures are, however, merely approximations, as large quantities of opal are disposed of privately to buyers on the fields, no record of which is obtained.

4. **Other Gems.**—Emeralds were found in New South Wales in the year 1890, near the township of Emmaville, the largest specimen found in the district weighing twenty-three carats in the rough. Altogether 2225 carats were sent to London during that year, some of the gems bringing £4 a carat, but the production has since dwindled, there being no record of any yield in 1906. Amongst other gems found in New South Wales at various times may be mentioned *turquoises*, discovered in 1894, near Bodalla, *topazes*, fine specimens of which have been obtained in the New England district, and *zircons* and *garnets*. Turquoises are also found in thin veins in Victoria, but the deposit is not rich enough to pay for expenses of working. Fine *agates* are found in many places in Victoria, but have not been made use of to any extent. Garnets are found in Western Australia, and beautiful specimens of *crocidalite* have been obtained at Yarra Creek in the Murchison district. *Rubies* have been found at various places in New South Wales and Queensland, and in the Westland district of Middle Island, New Zealand.

§ 15. The Mineral Wealth of Australia.

1. **Total Production.**—The value of the production from all minerals raised in Australia during 1906 is given in the following table:—

MINERAL PRODUCTION IN 1906.

Minerals.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	C'w'lth.
	£	£	£	£	£	£	£
Alunite	4,637	...	...	...	...	...	4,637
Antimony	52,645	3,075	6,917	...	...	...	62,637
Bismuth	5,700	...	1,882	...	...	24	7,606
Chrome	15	...	...	...	...	...	15
Coal	2,337,227	80,283	173,282	...	57,998	21,158	2,669,948
Coke	110,607	...	...	...	...	...	110,607
Copper	789,527	...	916,546	743,671	50,337	844,663	3,344,744
Diamonds	2,120	...	...	...	...	...	2,120
Diatomaceous Earth ...	...	1,120	...	...	...	...	1,120
Gems (unspecified)	...	...	18,110	...	...	...	18,110
Gold	1,078,866	3,280,478	2,313,464	81,225	7,622,749	254,963	14,631,745
Graphite	...	...	200	...	...	...	200
Gypsum	...	348	...	1,953	...	...	2,301
Iron	...	...	...	...	...	1,100	1,100
Iron Oxide	336	...	...	...	...	...	336
Ironstone Flux	723	...	14,114	33,852	512	...	49,201
Kaolin	...	383	...	...	...	...	383
Lead	1,084	...	49,884	...	...	...	50,968
Limestone Flux	7,463	...	23,364	4,791	1,691	...	37,309
Manganese	...	...	4,391	...	...	...	4,391
Molybdenite	4,798	...	17,034	...	...	...	21,832
Opal	56,500	...	3,000	...	...	...	59,500
Platinum	623	...	...	...	...	...	623
Salt	...	9,273	...	27,500	...	...	36,773
Scheelite	7,647	...	347	...	...	...	7,994
Shale...	28,470	...	...	...	...	...	28,470
Silver	36,431	4,980	101,693	10,410	37,612	90,261	281,387
Silver-Lead Bullion	2,826,542	...	...	...	...	462,443	3,291,557
Silver-Lead Ore	...	...	...	2,572	...		
Tantalite	...	...	...	140	2,644	...	2,784
Tin	255,744	11,644	490,283	36,907	157,644	557,266	1,509,488
Wolfram	9,057	...	64,136	6,981	...	1,465	81,639
Zinc	292,806	...	...	...	...	...	292,806
Unenumerated	22,392	...	...	6,575	...	...	28,967
Total	7,931,960	3,391,584	4,198,647	956,577	7,931,187	2,233,343	26,643,298

In the next table will be found the estimated value of the total mineral production in each State up to the end of 1906. The figures do not in all cases coincide with those published by the Mines Departments, as they are exclusive of certain items such as building stones, clay, cement, and lime, which appear in some of the mining returns. The New South Wales Mining report gives the production of building stone up to the end of 1906 as £17,682 (this figure, however, representing exports alone), while the production in Victoria during the same period is given in the Victorian Mines Report as £3,226,755. For comparative purposes the figures are therefore valueless, the utility of export figures for such a commodity as building stone being more or less dubious.

COMMONWEALTH MINERAL PRODUCTION TO END OF 1906.

Minerals.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	£	£	£	£	£	£	£
Gold	54,314,152	276,516,979	64,334,903	2,707,141	70,793,659	6,246,214	474,913,048
Silver and Lead	43,236,759	207,784	1,352,316	387,904	545,796	4,255,266	49,985,825
Copper	8,472,629	123,454	4,402,003	25,575,846	478,129	6,753,561	45,805,622
Tin	7,744,509	441,530	6,111,199	137,902	597,173	9,175,180	24,207,493
Coal	50,356,742	1,477,275	3,654,368	...	486,908	399,125	56,374,418
Other	6,683,364	257,185	873,828	936,650	53,860	120,814	8,925,701
Total ...	170,808,155	279,024,207	80,728,617	29,745,443	72,955,525	26,950,160	660,212,107

The "other" minerals in New South Wales include antimony, £253,279; bismuth, £114,614; chrome, £101,003; diamonds, £104,089; opal, £989,099; oil shale, £2,135,445; and zinc, £890,274. In the Victorian returns antimony ore was responsible for £180,811, and salt £34,210. Included in "other" in the Queensland production were opal, £155,695; gems, other, £61,777; bismuth, £78,889; wolfram, £356,538; antimony ore, £42,549; and manganese, £44,168. The chief item in South Australian "other" minerals was salt, £607,000. In the Tasmanian returns limestone flux was responsible for nearly £100,000.

(i.) *New Zealand.* The production of minerals in New Zealand during 1906 and up to the end of that year is given below:—

MINERAL PRODUCTION OF NEW ZEALAND, 1906, AND TOTAL TO 1906.

Minerals.	During 1906.	To end of 1906.	Minerals.	During 1906.	To end of 1906.
	£	£		£	£
Gold ...	2,270,904	69,501,488	Coal ...	916,562	12,526,704
Silver ...	143,572	921,267	Kauri Gum ...	522,486	13,443,017
Copper ...	...	18,228	Other ...	18,247	184,116
Chrome ...	...	38,002			
Antimony ...	...	52,598			
Manganese ...	40	61,831	Total ...	3,871,811	96,747,251

The so-called kauri gum—which is really a resin—has contributed about 14 per cent. of the total mineral production of New Zealand. The substance is the solidified turpentine of the kauri pine, and is used as the base of the best oil varnishes. It is obtained chiefly in the Auckland provincial district of the North Island, being found alike in the driest fern banks and the deepest swamps. A certain amount is also got from the forks of standing trees.

2. Total Employment in Mining.—The number of persons engaged in the mining industry in each State and New Zealand is an index of the significance of the mineral wealth of a country. During the year 1906 this was as follows:—

EMPLOYMENT IN MINING, 1906.

State.	Number of Persons Engaged in Mining for						Total.
	Gold.	Silver, Lead, and Zinc.	Copper.	Tin.	Coal and Slate.	Other.	
New South Wales ...	8,816	9,414	3,047	3,795	15,199	2,275	42,546
Victoria	25,304	13	3	95	693	130	26,238
Queensland	9,842	282	2,598	2,872	1,349	1,237	18,180
South Australia	900	50	5,000	...	...	1,000	6,950
Western Australia ...	17,926	...	296	890	307	10	19,429
Tasmania	988	1,745	2,391	1,659	208	14	7,005
Commonwealth ...	63,776	11,504	13,335	9,311	17,756	4,666	120,348
New Zealand ...	9,039	...	...	...	3,692	165	12,896

The following table shews the number of persons engaged in mining in the Commonwealth and New Zealand during each of the years 1891, 1901, and 1906, together with the proportion of the total population so engaged:—

PROPORTION OF PERSONS ENGAGED IN MINING, AUSTRALASIA.

1891, 1901, 1906.

State	1891.		1901.		1906.	
	Miners Employed.	No. per 100,000 of Population.	Miners Employed.	No. per 100,000 of Population.	Miners Employed.	No. per 100,000 of Population.
New South Wales ...	30,604	2,700	36,615	2,685	42,546	2,817
Victoria	24,649	2,151	28,670	2,381	26,238	2,144
Queensland	11,627	2,934	13,352	2,664	18,180	3,412
South Australia	2,688	834	7,007	1,931	6,950	1,829
Western Australia ...	1,269	2,496	20,895	11,087	19,429	7,473
Tasmania	3,988	2,695	6,923	4,017	7,005	3,917
Commonwealth ...	74,820	2,341	113,462	2,992	120,348	2,946
New Zealand ...	16,929	2,688	12,732	1,637	12,896	1,440

3. **Wages Paid in Mining.**—In the next table will be found a statement of the average wages earned by employés in the chief branches of the mining industry in Australia. The value of the figures is rather prejudiced by the wide diversity of conditions, not only in the several States but in different districts of the same State.

The figures quoted for New South Wales in gold mining refer to the Hillgrove and Mount Boppy districts. For copper the figures refer to the Cobar district, and represent rates as awarded by the Arbitration Court. The maximum is paid when copper is £115 per ton or over, and the minimum when the metal is £70 per ton and under, a graduated rate prevailing between the extremes. The rates for silver miners are those ruling at Broken Hill. As regards Queensland the rates for hewing in coal mines are for miners not doing their own wheeling. Where own wheeling is done the rate varies from 2s. 3d. to 5s. 6d. No distinction was made as to class of mining in the returns received from South Australia, and the figures have, therefore, been placed with copper mining. Generally speaking, the classification of the labour in the various States does not permit of very satisfactory comparisons.

WAGES PAID IN MINING INDUSTRY IN THE COMMONWEALTH.

Class of Mine.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.
GOLD—	per day.	per week.	per day.			per day.
Labourers	8/2	...	...	...	10/- to 11/10	6/- to 7/-
Bracemen	7/- to 8/6	£2 2/- to £2 8/-	7/6 to 11/3	...	11/8 to 13/-	7/6 to 8/8
Platmen	7/- to 8/6	£1 19/- to £2 2/-	7/9 to 9/6	...	11/8 to 13/-	7/6
Miners	8/4 to 9/3	£2 5/- to £2 10/-	8/2 to 11/8	...	11/8 to 13/6	7/6 to 8/-
Wet	10/2	£2 10/- to £3 £2 8/- for 6 hr. shifts	...	...		9/2
Shaft-sinking	9/-		...	...		8/4
Wet	...		...	...		9/2
Blacksmiths	10/6 to 12/-	...	9/9 to 13/4	...	12/8 to 14/9	8/4 to 9/-
Carpenters	10/- to 11/-	...	9/1 to 12/10	...	...	8/- to 8/4
Engine-drivers—	9/- to 10/-					...
Stationary		£2 8/- to £3	7/4 to 13/4	...	14/- to 15/9	8/- to 8/4
Winding						8/4 to 9/6
Battery feeders	...	...	6/6 to 9/5	...	...	5/- to 8/-
Shift bosses	10/- to 12/-	...	10/7 to 13/-	...	...	9/2 to 10/-
Machine miners	9/- to 10/6	...	9/8 to 11/9	...	...	8 4
Timbermen	9/- to 10/-	...	...	...	12/6 to 14/-	...-
			(Note.—The above figures refer to averages per shift in all metalliferous mines in Q'nsland)		(The wages above are as paid in the chief mining districts and fixed by the Court of Arbitration or by industrial agreements)	
SILVER-LEAD—						
Labourers	7/6	...		...		7/- to 8/8
Bracemen	8/4	...		...		8/8
Miners	9/-	...		...		9/- to 10/-
Blacksmiths	9/- to 10/6	...		...		7/- to 13/-
Carpenters	9/- to 10/6	...		...		8/- to 15/-
Engine-drivers—				...		
Winding	10/-	...	...	...		9/- to 10/8
Shift bosses	14/-	...	...	...		10/- to 10/10
Truckers	7/6	...	...	...	...	...
Timbermen	10/-	...	...	...	...	...
COPPER—						
Labourers	...	...	..	...	...	7/- to 9/-
Miners	8/4 to 10/2	...	...	8/9	...	9/- to 10/6
Blacksmiths	10/- to 13/4	...	...	8/9	...	7/- to 11/6
Carpenters	...	...	...	9/3	...	8/- to 10/6
Engine-drivers—			(see above)			
Winding	...	...	...	9/-	...	9/- to 9 6
Bracemen	8/- to 9/3	...	...	8/-	...	...
Drill sharpeners	9/- to 13/-	...	...	(These figures are averages for all branches of mining)	...	...
Timbermen	9/2 to 10/8	...	...		...	...
Machine miners	9/2 to 10/6	...	...		...	..
Miners in wet [ground	9/4 to 11/-	...	...		...	...
TIN—		per day.				
Labourers	7/6 to 8/-	7/-	...	...	...	7/- to 8/-
Miners	...	10/-	...	...	...	8/- to 8/4
Blacksmiths	...	10/-	...	...	...	10/-
Carpenters	...	8/4	...	...	...	9/6 to 10/-
Engine-drivers—stationary	...	...	(see above)	...	...	9/- to 10/-
Shift bosses	Boxmen 8/4 Sluicemen 7/6	...	...	...	...	8/6
Nozzlemen		8/- to 8/4	...	...	...	8/- to 9/-
Racemen		7/-	...	...	...	7/6 to 8/6
Face bosses		...	...	...	...	10/-
COAL—		per shift.				
Deputies	8/- to 10/-	9/- to 12/-	...	...	...	...
Shot firers	9/- to 10/-	...	...	..	...	...
Shiftmen	7/- to 9/-	...	6/6 to 10/-	...	...	...
Wheelers	7/-	5/ to 7/6	...	...	...	...
Overmen	...	...	...	...	...	...
Miners	...	7/6 to 8/4	Hewing rate, 1/0½ to 3/-	...	...	8/- to 8/4
Machinemen	10/- to 11/-	...	7/- to 8/-	...	...	...
Enginemen, wdg.	9/9	4/- to 8/4	6/- to 10/-	.	...	..
Enginemen, hlg.	8/9			...	...	. .
Enginemen, other	7/9			...	...	...
Labourers	6/- to 7/-	...	6/- to 8/-	...	...	...
Blacksmiths	10/-	8/4- to 10/-	7/- to 10/-	...	...	...
Carpenters	9/- to 10/-	8/-	6/- to 8/6	...	...	. .
Safety lampmen	8/- to 10/-	...	...	...	...	..
Platmen	...	5/6 to 7/6	2/6 to 8/-	...	...	. .

SECTION XIII.

MANUFACTURING INDUSTRIES.

§ 1. Introduction.

1. **Defects in Industrial Statistics.**—A complete statistical account of the growth of the manufacturing industries in Australia unfortunately cannot be given, owing to the fact that the necessary statistics have not been collected by the several States upon a definite and identical basis. Even in respect of either the definition of a "factory," or (so far as they might be included in related returns) the statistics of persons employed therein, there was no common agreement. The relatively minor place that manufacturing industry held in relation to the total activity of Australia is, perhaps, responsible for the fact that the necessity for uniform method was not earlier recognised. Combinations of the figures published prior to 1903 would be very misleading. Even at the present time satisfactory statistics of manufacturing production are available only to a very limited extent, and definite evidence of the progress of manufacturing industry can be obtained rather from returns furnished in connection with oversea export and interstate trade in Australia than from any adequate source of information as to Australian production.

2. **Classification of Factories.**—In 1896 it was agreed, as between Victoria and New South Wales, to adopt a common definition of the term "factory," viz., "any factory, workshop, or mill where four or more persons are employed or power is used," and this agreement was adopted for the States generally at the Conference of State Statisticians in 1902. It was decided also that the term should include "all establishments, whether making for the trade, wholesale or retail, or for export."

Each person employed in and about a factory, in whatever capacity, is now included as a factory employé, consequently every proprietor who works in his business is also included. For the purpose of accurate definition factories themselves have been placed under nineteen different categories, according to the industry carried on therein; most of these categories have also been subdivided.

3. **History.**—Excepting in the preparation of foodstuffs and in the production of such cheap and bulky articles as must, almost simultaneously with the establishment of a colony, practically be locally manufactured therein, little was done in regard to ordinary factory industries till after the development of the Victorian goldfields. A marked decline in the activity of these goldfields threw many immigrants, whose early life had been passed in English cities, out of employment. This no doubt intensified the early impulses towards industrial employment. In the State of Victoria, in particular, it was sought to encourage the investment of capital in manufacturing enterprises by the establishment of protective Customs duties. Some concentration of population in the metropolitan centres also helped to promote industrial activity. The throwing open, through Federation, of the whole of the Australian markets to the industrial products of each Australian State, has facilitated the internal distribution of the products of Australian industry.

§ 2. Australian Factories in General.

1. **Localisation of Industry.**—The concentration of industry in the metropolitan areas is less marked in New South Wales and Tasmania than in the other States.

The following table indicates the characteristics of the concentration in the two States of largest population :—

LOCALISATION OF INDUSTRY, NEW SOUTH WALES AND VICTORIA, 1905 AND 1906.

NUMBER OF FACTORIES.

State.	Area.	Number of Factories in which the Number of Employés is :—						
		Under 4.	4	5 to 10.	11 to 20.	21 to 50.	51 to 100.	Abov 100.
New South Wales (1905)	Metropolitan	121	125	583	361	319	127	94
	Country	457	266	819	302	118	30	28
Victoria (1906)	Metropolitan	190	245	874	484	388	148	180
	Country	442	256	752	292	129	16	14

NUMBER OF PERSONS EMPLOYED THEREIN.

State.	Area.	Under 4.	4	5 to 10.	11 to 20.	21 to 50.	51 to 100.	Abov 100.
New South Wales (1905)	Metropolitan	270	500	3,865	5,304	9,964	8,800	20,139
	Country	1,077	1,064	5,596	4,350	3,550	2,193	5,503
Victoria (1906)	Metropolitan	443	980	6,135	7,159	12,239	10,145	28,840
	Country	1,310	1,024	5,238	4,194	3,799	1,052	2,671

The totals were as follows :—

New South Wales, (1905), Metropolitan, 1680 factories, employing on an average 48,842 persons.
„ „ „ „ Country, 2020 „ „ „ „ 23,333 „
Victoria, (1906), Metropolitan, 2459 factories, employing on an average 65,941 persons.
„ „ Country, 1901 „ „ „ „ 19,288 „

2. **Development of Manufactories.**—In stating the number of factories in the States of the Commonwealth it is to be remembered that in the collection of statistics in each State the same basis has not been adopted. In 1906 in Queensland, for example, 689 factories have been excluded under the definition now employed. This would bring the total up to 1993 on the former basis. The factories excluded, however, are those employing only two hands and no power, and the difference in other respects is not material.

In the following table shewing the number of manufactories in the Commonwealth between the years 1903 and 1906, it should be noted that not only are the results affected by differences of classification, but also that the number of factories from year to year does not unequivocally indicate a change in the position of the industry, since amalgamations may account for part of the reduction of the numbers. Thus in Melbourne a number of breweries have been combined under a single company, and it is intended to keep only three breweries active.

MANUFACTORIES OF THE COMMONWEALTH, 1903 TO 1906.

TOTAL MANUFACTORIES.

	N.S.W.	Victoria.	Queensland.	South Aust.	West. Aust.	Tasmania.	C'wealth.
1903 ...	3,476	4,151	2,001*	914*†	586	431	11,559
1904 ...	3,632	4,208	1,909*	914*	672	444	11,779
1905 ...	3,700	4,264	1,911*	991	649	436	11,951
1906 ...	3,861	4,360	1,304	1,018	665	373	11,581

* Not on same basis as other States. † 1904 results repeated.

PERCENTAGE OF FACTORIES IN EACH STATE TO TOTAL IN COMMONWEALTH IN 1906.

—	N.S.W.	Victoria.	Queensland.	South Aust.	West Aust.	Tasmania.	C'wealth.
1906...	33.34	37.64	11.26	8.79	5.74	3.23	100.00

TOTAL FACTORIES EMPLOYING MECHANICAL POWER IN 1906.

1906...	2,496	2,676	916	692	435	232	7,447

3. **Use of Mechanical Power.**—The principal motive power is steam, but the metropolitan cities possess electric generating plants, owned variously by the Government, public bodies or private companies. From these many manufactories find it convenient to derive their power. The distinction between factories employing steam, gas, oil, or electric machinery, and those employing either other power or none at all, affords an opportunity of ascertaining how many factories there are in the ordinary sense of the word, that is, establishments which are not merely workshops. For instance, in the Victorian clothing and textile trade, out of 1173 factories only 252 employ mechanical power, the balance may consequently be regarded merely as workshops.

As a source of power electricity is coming into increased use, the number of Victorian manufactories employing it having advanced from 159 in 1902 to 438 in 1906. The following table shews the distribution of the source of power for the latter year, the actual horse-power being in all cases indicated.

DISTRIBUTION OF POWER IN THE MANUFACTORIES OF THE COMMONWEALTH, 1903 AND 1906.

Source of Power.		Steam.	Gas.	Oil.	Electricity.	Total.
		H.P.	H.P.	H.P.	H.P.	H.P.
New South Wales ...	1903	56,121	2,538	13,536	205	72,400
	1906	70,192	4,212	277	8,989	83,670
Victoria	1903	36,727	3,600	764	1,659	42,750
	1906	40,807	3,706	966	3,286	48,765
Queensland ...	1903	...	...	...	...	27,027
	1906	26,233	896	184	260	27,573
South Australia ...	1904	...	...	...	...	13,945
	1906	12,107	1,858	1,157	2,530	17,652
Western Australia ...	1903	13,687	157	541	2,036	16,421
	1906	19,928	219	634	3,722	24,503
Tasmania	1903	5,839	61	*1,110	1,358	8,363
	1906	8,002	64	114	1,657	9,837
Total Commonwealth	1903	112,374	6,356	15,951	5,253	180,906
	1906	177,269	10,955	3,332	20,444	212,000

* Includes water-power, which is not included in 1906.

§ 3. Numbers Employed in Australian Factories.

1. **Total Number Employed.**—In the following return, shewing the total number of persons employed, both sexes and all ages are included. The individuals embraced may be classed under the following heads, viz.:—(i.) Working proprietors; (ii.) managers and overseers; (iii.) accountants and clerks; (iv.) enginedrivers and firemen; (v.) skilled and unskilled workers in the factories, mills, or workshops; (vi.) carters and messengers; and (vii.) others.

The number of factory employés per hundred thousand of the total population of the Commonwealth has increased steadily from 5022 in 1903 to 5599 in 1906.

The following table shews the distribution of factory employés for the States, with the totals for the Commonwealth, for the years 1903 to 1906:—

TOTAL NUMBER EMPLOYED IN FACTORIES AND PERCENTAGE OF INCREASE, 1903 TO 1906.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
1903 ...	65,633	73,229	19,286	18,182*	11,828	7,785	195,943
	3.66	4.18	4.15	0.00	7.24	5.64	3.84
1904 ...	68,036	76,287	20,058	18,182	12,685	8,224	203,472
	6.08	5.18	8.21	6.67	0.38	3.61	5.52
1905 ...	72,175	80,235	21,705	19,394	12,733	8,468	214,710
	7.82	6.22	10.38	4.70	1.29	— 7.32	6.05
1906 ...	77,822	85,229	23,961	20,306	12,897	8,506†	228,721

* Figures for 1904.

† Includes 650 working proprietors; this class is included for the first time.

The percentages of annual increase in the number of employés, calculated in all cases on the figures immediately above, is shewn by the small figures.

This distribution according to the percentage on the total for the Commonwealth for each year is as follows:—

PERCENTAGE OF EMPLOYES IN EACH STATE ON TOTAL FOR COMMONWEALTH.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Cwealth.
	%	%	%	%	%	%	%
1903 ...	33.50	37.37	9.84	9.28*	6.04	3.97	100.00
1904 ...	33.44	37.49	9.86	8.94	6.23	4.04	100.00
1905 ...	33.62	37.37	10.11	9.03	5.93	3.94	100.00
1906 ...	34.03	37.26	10.47	8.88	5.64	3.72†	100.00

* † See notes above.

The number of persons employed in factories in each State per ten thousand of the estimated mean population of such State, and of the Commonwealth as a whole, is as follows:—

NUMBER OF FACTORY EMPLOYES PER 10,000 OF MEAN POPULATION, 1903 TO 1906.

Year.	N.S.W.	Victoria.	Queensland.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
1903	463	606	376*	...	534	439†	502
1904	472	632	386*	492	536	460†	515
1905	489	662	413*	518	509	472†	534
1906	515	696	450	534	496	475	560

* Inclusive of factories with two persons. † Not including proprietors.

2. **Number of Actual Operatives.**—The total number employed in factories is, of course, appreciably greater than the number of actual operatives. The latter can be

given for four States only, since full information for Queensland and South Australia is lacking:—

NUMBER OF ACTUAL OPERATIVES IN FACTORIES, 1903 TO 1906.

Year.	N.S.W.	Victoria.	Queensland.	S. Aust.	W. Aust.	Tasmania.	C'wealth.*
1903	53,420	57,721	Information not available.		9,300	5,696	126,137
1904	53,947	61,120			9,755	6,669	131,491
1905	58,842	64,514			9,982	6,719	139,959
1906	64,416	68,784			10,204	6,876	150,168

* Excluding Queensland and South Australia.

3. **Outworkers.**—The number of "outworkers" connected with factories is available for only three of the States for 1903 to 1905, and for 1906 for five of the States only:—

NUMBER OF OUTWORKERS CONNECTED WITH FACTORIES.
1903 TO 1906.

Year.	N.S.W.	Victoria.	Q'sland.	Sth. Aus.	West Aus.	Tas.
1903	308	955	...	...	Information not available.	71
1904	439	991	...	...		42
1905	374	1,186	...	...		86
1906	501	1,431	1,533	1,372		57

For the last year mentioned, the results for Queensland and South Australia represent the outworkers registered under the Factory Acts, practically the whole of them being connected with the clothing and textile trades. Legislation in Victoria for the protection of workers against sweating, requires that outworkers or homeworkers shall be registered in the Department of the "Chief Inspector of Factories, Workrooms, and Shops," and requires also that payment to employés doing piece-work shall be made at rates so fixed as to enable the piece-worker to earn as much as the time-worker. Although the figures from 1903 to 1906 shew a steady and rapidly increasing progress in the number of outworkers, they cannot compare with the figures for early years. For example, in 1897 there were 2382 outworkers registered in Victoria in the clothing trades, while the number of employés in factories for those trades was 14,293. The corresponding figures for the same year in New South Wales were 546 outworkers and 8602 factory employés. Thus it will be seen that the number of employés in factories has largely increased, while the increase in the number of outworkers has been relatively small.

According to official reports, the hygienic condition of factories is advancing satisfactorily, so that not only is the condition of the employé improved, but general public hygiene has also advanced.

In the above figures, individuals working for themselves are not included, the term "outworker" or "homeworker" having acquired a special meaning in connection with factory affairs. It technically embraces only those to whom work is given out by factory owners to be wrought upon in their own homes.

4. **Numbers in Factories of Various Sizes.**—The distribution of persons employed in connection with factories of various sizes is shewn in the following table for the year 1906:—

NUMBERS OF EMPLOYES IN FACTORIES OF VARIOUS SIZES.

No. of Persons in Factory.	No. of Factories and Persons.	N.S.W.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	C'wealth.
Under 4 ...	Factories	592	632	225	183	77	50	1,759
	Persons	1,400	1,753	506	434	175	122	4,390
4 ...	Factories	383	501	189	128	66	23	1,290
	Persons	1,532	2,004	956	512	264	108	5,371
5 to 10 ...	Factories	1,383	1,626	416	348	258	147	4,178
	Persons	9,636	11,373	3,347	2,489	1,822	1,067	29,734
11 to 20 ...	Factories	739	776	199	169	139	70	2,092
	Persons	10,661	11,353	2,871	2,486	2,016	1,028	30,415
21 to 50 ...	Factories	451	517	170	119	78	56	1,301
	Persons	14,264	16,038	5,412	3,890	2,340	1,958	43,996
51 to 100 ...	Factories	160	164	70	43	30	12	479
	Persons	11,161	11,197	4,780	2,979	1,955	1,603	33,675
Over 100 ...	Factories	153	144	35	28	17	15	392
	Persons	29,168	31,511	6,089	7,512	4,325	2,625	81,230
Total No. of Factories...		3,861	4,360	1,344	1,018	665	373	11,581
,, ,, Persons ...		77,822	85,229	23,961	20,306	12,897	8,506	228,721

§ 4. Sex Distribution in Factories.

1. **Distribution of Employes as Regards Sex.**—The total male and total female employés in factories in each State of the Commonwealth, excepting Queensland, is as follows, absolute numbers being shewn by the larger figures, and percentages by the smaller:—

PERSONS CONNECTED WITH FACTORIES, ACCORDING TO SEX, 1903 TO 1906.

State.		1903.	1904.	1905.	1906.	Actual Operatives only, 1906.
New South Wales ...	Male	52,453 7.04	53,457 7.01	56,111 7.17	59,979 7.46	47,814
,, ...	Female	13,180 1.97	14,579 2.14	16,064 2.32	17,843 2.53	16,602
Victoria ...	Male	49,434 8.14	50,554 8.35	52,925 8.71	56,339 9.19	42,654
,, ...	Female	23,795 3.94	25,733 4.26	27,310 4.50	28,890 4.71	26,130
Queensland* ...		...	...	...	...	...
South Australia ...	Male	14,421‡ 7.62	14,421 7.62	15,850 8.15	16,467 8.21	...
,, ...	Female	3,761‡ 2.07	3,761 2.07	3,544 1.21	3,839 2.13	...
Western Australia ...	Male	10,420 7.72	11,078 7.89	11,091 7.52	11,015 7.24	8,422
,, ...	Female	1,408 1.71	1,607 1.61	1,642 1.62	1,882 1.77	1,782
Tasmania ...	Male	6,445 6.96	6,880 7.39	7,105 7.62	7,228 7.75	5,681
,, ...	Female	1,340 1.56	1,344 1.55	1,363 1.58	1,278 1.46	1,187
Commonwealth† ...	Male	133,173 7.55	136,390 7.62	143,082 7.84	151,028 7.98	104,581§
,, ...	Female	43,484 2.68	47,024 2.84	49,923 3.00	53,732 3.17	45,701§

* Numbers according to sex not available. † Exclusive of Queensland.
‡ 1904 figures adopted. § Excluding Queensland and South Australia.

For Queensland the information as to the numbers of each sex is not available. The above numbers, reckoned as percentages of the total male and total female population, are shewn by the small figures written under each of them.

2. **Rate of Increase for Each Sex.**—The percentage of annual increase, based upon the figures for the preceding year, for the years from 1903 to 1906, is as in the following table. This shews that in South Australia for 1904-5 there was a falling-off of female employment; for 1905-6 also a slight falling-off in Tasmania for females, as well as a slight falling-off in Western Australia for males, took place:—

PERCENTAGES OF ANNUAL INCREASE OF PERSONS CONNECTED WITH FACTORIES, 1903 TO 1906.

Year.	N.S.W.		Victoria.		Queensland.		S. Aust.		W. Aust.		Tasmania.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
1903-4 ...	1.91	10.61	2.26	8.14	Not available.		...	...	6.31	14.13	6.90	0.34
1904-5 ...	4.96	10.18	4.69	6.13			9.90	-3.11	0.12	2.18	3.27	2.90
1905-6 ...	6.89	11.07	6.45	5.78			3.74	8.32	-0.68	1.46	1.74	-0.34

The minus sign (–) denotes a decrease.

3. **Increasing Ratio of Female Employment in Factories.**—The increasing extent to which females are employed in the factories of the Commonwealth will perhaps be best shewn by giving the number of females to every 100 male employés for each year and for each State for which the figures are available:—

NUMBER OF FEMALES PER 100 MALES IN AUSTRALIAN FACTORIES, 1903 TO 1906.

Year.	N.S.W.	Victoria.	Queensland.	S. Aust.	W. Aust.	Tas.	C'wealth.*
1903	25.13	48.14	Not available.	...	13.51	20.79	32.65
1904	27.27	50.90		26.07	14.51	19.53	34.48
1905	28.63	51.60		22.35	14.80	19.46	34.89
1906	29.75	51.28		23.31	17.09	17.68	35.58

* Omitting Queensland.

4. **General Circumstances of Female Employment in Factories.**—Special legislation regarding the employment of women in manufactories dates back in Victoria as far as 1874. Twelve years later (1886) the proportion in factories of women to men had advanced to about one to five. In 1891 it was somewhat less, but in 1896 had grown to about one woman to three men, and at present is about one to two. The employment of women is, however, largely confined to a few trades.

In New South Wales the male workers were about seven times the number of females in 1886; in 1891 the proportion had become six to one, and in 1905 about five to one. The great prosperity in clothing and textile industries is one of the main causes of increase in female employment. Large numbers are occupied in tailoring and dressmaking, in wholesale manufactories, in tobacco factories and preserving works. Certain trades are specifically known as women's trades, such for example as clothing and textile trades, preparation of food, printing and book-binding, lighter work connected with the drug trade, such for example as wrapping. In common with commercial establishments, a considerable number of women are also employed as clerks and typewriters in factories. The earnings of women, and also the protection afforded them by legislation, will be referred to in connection with wages hereinafter.

The proportion of women employed in Classes VI., VII., and VIII., viz., in connection with food, drink, etc., clothing and textiles, books, and printing, to the total number of women employed in factories, as well as the absolute numbers, are shewn in the following table:—

NUMBER AND PROPORTION TO TOTAL OF FEMALE EMPLOYES IN SPECIAL CLASSES OF TRADES, 1906.

Class.	N.S.W.		Victoria.		Q'sland.	Sth. Aust.		West. Aust.		Tasmania.		C'wealth.*	
		%		%			%		%		%		%
VI. ...	2,048	11.48	2,739	9.48	Not available.	424	11.04	121	6.43	170	13.30	5,502	10.24
VII. ...	13,120	73.53	22,977	79.52		2,774	72.26	1,531	81.35	1,009	78.95	41,409	77.07
VIII. ...	1,422	7.97	1,889	6.54		397	10.34	166	8.82	67	5.24	3,941	7.33
	16,590	92.98	27,603	95.54	...	3,595	93.64	1,818	96.60	1,246	97.49	50,852	94.64

* Exclusive of Queensland.

NOTE.—Class VI. is food, drinks, etc.; Class VII., clothing, textiles, etc.; Class VIII., books, printing, etc.

The classification of the employment of women in Class VII. in the two States of largest population is of interest. The following table shews, also, for the sake of comparison, the number of males employed:—

EMPLOYMENT IN CLASS VII., 1906.

Class VII.	New South Wales.		Victoria.	
	Males.	Females.	Males.	Females.
Woollen and tweed mills	160	178	724	710
Boots and shoes	3,178	1,589	3,838	1,917
Slop clothing ... ... Clothing (tailoring)	2,337	5,744	1,827	5,840
Dressmaking and millinery	53	3,602	148	8,321
Dyeworks and cleaning	27	22	44	134
Furriers	14	11	23	49
Hats and caps	342	694	529	825
Waterproof and oilskin	32	129	49	182
Shirts, ties, and scarves	91	1,028	192	4,160
Rope and cordage	183	4	368	266
Tents and tarpaulins	113	119	56	16
Total	6,530	13,120	7,798	22,420

Beside the above, 2 males and 39 females were engaged in corset manufacture in Victoria, and in the umbrella factories 72 males and 161 females, while in New South Wales the number in the last-mentioned trade was 59 males and 90 females.

The general conditions of female labour in factories have been increasingly favourable, and women have shared in the advantages of the settlement of wage questions by the authorities.

The Victorian Factories Acts are practically the bases of similar Acts in other States, and their main provisions may thus be summarised:—

(i.) The hours of labour are limited to forty-eight hours per week and ten per day.

(ii.) Women are prohibited from cleaning mill-gearing in motion, or working between the fixed and traversing parts of any self-acting machine in motion.

(iii.) Women share in the general advantages of the Acts.

5. **Factory Proprietorship by Women.**—The extent to which women engage in manufacturing business on their own account is indicated in the following table, which gives the totals of female proprietors as well as the number of those engaged in clothing industries:—

NUMBER OF FEMALE PROPRIETORS OF FACTORIES, 1906.

Females.	N.S.W.	Vic.	Q'land.	S. Aus.	W. Aus.	Tas.	C'wlth.*
Engaged in clothing industries	410	566	...	...	23	36	1,035
Total female proprietors ...	492	611	...	...	27	39	1,169

* Exclusive of Queensland and South Australia.

§ 5. Child Labour in Factories.

1. **Number of Children in Factories.**—Speaking generally, children are not allowed to work in factories in Australia until they reach the age of thirteen, and in the statistical compilations of the various States the term "child" may be taken to denote any person under sixteen years of age, excepting in New South Wales, where it denotes any person under fifteen. In the latter State also, if the child be under fourteen the special permission of the Factories Department must be obtained before he may enter upon employment.

NUMBER OF CHILDREN IN FACTORIES, 1903 TO 1906.

State.		1903.	1904.	1905.	1906.
New South Wales	... Male	774	748	668	881
"	... Female	420	452	473	579
Victoria ...	... Male	2,696	3,058	3,261	3,213
" ...	... Female	2,332	2,952	3,034	2,997
Queensland* ...	...	...	...	...	...
South Australia	... Male	1,245‡	1,245	1,362	1,166
"	... Female	395‡	395	324	400
Western Australia	... Male	179	217	197	203
"	... Female	47	94	81	126
Tasmania ...	... Male	125	168	284	251
" ...	... Female	47	75	128	99
Commonwealth†	... Male	5,019	5,436	5,772	5,803
"	... Female	3,241	3,968	4,040	4,201

* Not available. † Omitting Queensland. ‡ 1904 figures.

The apparently small number in New South Wales is partly due to the fact that workers between fifteen and sixteen are included among adults.

2. **Industries Employing Child Labour.**—The industries employing child labour are as shewn hereunder:—

NUMBER OF CHILDREN ENGAGED IN VARIOUS INDUSTRIES, 1906.

Class.	Industry.	N.S.W.		Victoria.		Q'ld.	S. Aust.		W. Aust.		Tas.		C'wealth.*	
		M	F	M	F	...	M	F	M	F	M	F	M	F
I.	Treating raw material, product of pastoral, &c., pursuits	17	...	114	...	Information not available.	33	1	...	...	...	...	164	1
III.	Processes in stone, clay, glass, etc. ...	59	4	165	2		43	...	5	...	17	...	289	6
V.	Metals & machinery	110	...	567	...		316	...	36	...	6	...	1,035	...
VI.	Food & drinks ...	174	62	432	232		277	63	43	10	67	30	993	397
VII.	Clothing & textiles	135	401	703	2,397		142	257	20	105	30	60	1,030	3,220
VIII.	Books, paper, &c....	202	82	633	273		128	72	49	10	45	6	1,057	442
XI.	Vehicles, &c. ...	27	...	154	6		58	...	17	...	22	...	278	6
XIII.	Furniture, &c. ...	37	1	104	9		29	...	9	...	7	3	186	13
Totals		761	550	2,872	2,919	...	1,026	392	179	125	194	99	5,092	4,085

* Excluding Queensland.

3. **Apprenticeship.**—The apprenticeship systems of the several States may be summarised as follows :—

In New South Wales, no child may be apprenticed until the attainment of the age of fourteen years, in Victoria and Queensland, twelve years. There is no limitation in the case of the other States, nor any regulating Acts except as applying to charity apprentices. The statutes limiting the age at which children may begin to work may be regarded as applicable by way of preventing too early apprenticeship, so also may those directing that education be continued up to a certain age or standard.

Indentures must be entered into specifying the conditions of the employment. Apprenticeships may not exceed seven years in duration, and become inoperative at twenty-one years of age, or in the case of women, on marriage.

The Arbitration Courts and Wages Boards have power to limit the number of apprentices which may be taken into a factory. No general statistics of the number of apprentices in Australia have been collected up to the present time. Other enactments relating to child labour are referred to elsewhere.

4. **Conditions of Child Labour.**—Child labour is afforded a protection in respect of hours of toil similar to that afforded to women. On the whole the conditions of labour are satisfactory, and opportunity is assured that a proper period shall be devoted to elementary education, and that the early years of toil shall not exhaust the worker before the attainment of full growth.

§ 6. Investment of Capital in Manufactories.

1. **Land and Buildings.**—The approximate values of the land and buildings occupied as manufactories in the several States from the years 1903 to 1906, so far as particulars are available, are :—

VALUES OF FACTORY LAND AND BUILDINGS, 1903-6.

Year.	N.S.W.*	Victoria.	Queensland.	S. Aust.	W. Aust.	Tasmania.	C'wealth.†
	£	£	£	Information not available.	£	£	£
1903	8,029,890	7,967,945	2,631,039		1,291,115	995,894	20,915,883
1904	8,029,890	7,641,051	2,699,191		1,731,233	1,000,481	21,101,846
1905	8,029,890	7,771,238	2,709,951		1,685,597	963,517	21,160,193
1906	8,029,890	8,062,110	2,405,559		1,775,279	668,837	20,939,675

* According to Census 1901, no later figures available. † Excluding South Australia.

2. **Plant and Machinery.**—The approximate value of the plant and machinery used in manufactories of the several States during the years 1903-6, so far as particulars are available, is as follows :—

VALUE OF PLANT AND MACHINERY IN FACTORIES, WITH PERCENTAGE OF INCREASE, 1903 TO 1906.

Year.	N.S.W.	Victoria.	Queensland.	S. Aust.	W. Aust.	Tasmania.	C'wealth.*
	£	£	£	Information not available.	£	£	£
1903	7,009,806	5,010,896	4,052,584		1,644,331	922,161	18,639,778
	7.52	20.28	3.64		8.04	—18.24	8.88
1904	7,536,903	6,027,134	4,200,303		1,776,481	753,967	20,294,788
	5.08	2.66	—5.05		3.24	0.00	1.92
1905	7,919,948	6,187,919	3,988,056		1,834,098	753,924	20,683,945
	4.74	4.25	7.38		1.49	11.67	5.07
1906	8,295,337	6,450,355	4,282,502		1,861,477	841,883	21,731,554

* Excluding South Australia. The sign (—) denotes decrease.

The small figures denote the percentages of annual increase or diminution, that is, the difference between any two years calculated on the figures for the earlier one.

3. **Wages.**—The total amount of salaries and wages during the years 1903-6 paid in factories in each State of the Commonwealth returning such information, excluding all sums drawn by working proprietors, is as follows:—

SALARIES AND WAGES IN FACTORIES AND PERCENTAGE OF INCREASE, 1903 TO 1906.

Year.	N.S.W.	Victoria.	Queensland.	South Aust.	West. Aust.	Tas.	C'wealth.
	£	£			£	£	£
1903 ...	4,839,557	4,573,795	Not collected.	Not collected.	1,415,674	‡	*10,829,026
	3.58	4.82			7.46	...	10.50
1904 ...	5,012,758	4,794,365			1,521,263	637,749	†11,966,135
	3.56	5.10			—3.06	1.72	3.24
1905 ...	5,191,350	5,039,115			1,474,650	648,725	12,353,840
	7.71	8.52			3.83	—5.09	6.96
1906 ...	5,591,888	5,468,470			1,531,117	621,992	13,213,467

* For three States. † For four States. ‡ Not collected.

The annual increase on any year's figures is shewn as a percentage thereof in small figures.

§ 7. General Summary regarding Manufacturing Industries.

The preceding results shew that the manufacturing industries of Australia have developed considerably during the period under review. Between 1903 and 1906 the development may be summarised in the following table:—

PERCENTAGE OF INCREASE IN NUMBER OF FACTORIES, EMPLOYES, AND INVESTED CAPITAL, 1903-1906.

Item.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aus.	Tas.	C'wlth.
Number of factories	11.08	5.03	— 0.39	11.37	13.48	—13.46	6.15
Average number employed ...	18.57	16.38	31.74	11.68	9.04	0.91	17.11
Horse-power used	15.57	14.07	2.02	26.58	49.22	17.63	17.18
Value land and buildings ...	...	1.18	— 8.57	...	37.49	—33.00	0.12*
Value plant and machinery ...	18.34	28.72	5.67	...	13.24	— 8.70	16.58*
Total payment salaries and wages	15.54	19.56	...	...	8.15	— 2.47	10.42†

* Omitting South Australia. † Omitting Queensland and South Australia.

In connection with the above table it should be noted that, in order to make the comparison with the 1903 figures just, 689 factories without mechanical power, employing less than four but not less than two persons, with 1447 persons employed therein, have been added to the figures for 1906. The comparative result will, however, be probably substantially correct and sensibly identical with what would have been, had it been possible to get the data according to the present statistical classification.

The apparent decrease in the value of the lands and buildings occupied by factories in Tasmania is due to the inclusion in 1903, in lands and buildings occupied by breweries, of a large amount of real estate belonging to their proprietors, such as hotels, bush lands, etc. In 1903 the value of brewery lands and buildings was given as £417,243, in 1906 as £86,518, a decrease of £330,725. The decrease of the total was £329,057, so that on the whole there is an increase in value.

The results above indicated may justly be regarded as very satisfactory, especially when the fact is kept in mind that in the last two decades of the century just closed there were considerable economic disturbances, partly through drought conditions and partly through the occurrence of financial crises. It is also to be remembered that the advent of Federation, with consequent unification of the fiscal policy for Australia, involved considerable adjustment of the industrial and commercial affairs of the various States.

The greater part of the more complex manufacturing industries is carried on in the States of greater concentration of population, namely, New South Wales and Victoria. The developments for the two last quinquennia are as follows:—

GROWTH IN FACTORIES, 1896 TO 1906.

Particulars.	New South Wales.			Victoria.		
	1896.	1901.	1906.	1896.	1901.	1906.
No. of Factories	3,106	3,367	3,861	2,810	3,249	4,360
Average No. Employed	57,747	66,135	77,822§	50,448¶	66,529¶	85,229
Horse-power Employed	33,253	40,824	83,670	28,996	34,548	48,765
Value of Land and Buildings* £	†	8,029,890‡	...	7,297,010	7,451,370	8,062,110
Value of Plant and Machinery* £	5,535,905	5,770,725	8,295,337	4,982,640	4,847,130	6,450,355
Total Salaries and Wages Paid* £	...	4,945,079	5,591,888	...	...	5,468,470

* Approximate only. † Not available. ‡ Census of 1901; no later information available.
§ Includes 5644 working proprietors; this class was not included in the other figures.
¶ Includes working proprietors, but these are not separable from the number of managers and overseers.

§ 8. Particular Industries.

1. **General.**—The preceding remarks and tables give a general view of the recent development of the manufacturing industries in Australia treated as a whole, but to make the information complete it must necessarily be supplemented by details exhibiting the development of different classes of industry. This alone will furnish adequate information as to the individual channels in which flow the main efforts of Australian manufacture.

Industries have been classified under nineteen categories according to their connection with the following matters, viz.:—(i.) Raw material, the product of pastoral pursuits, or vegetable products not otherwise classed; (ii.) Oils and fats, animal and vegetable; (iii.) Processes relating to stone, clay, glass, etc.; (iv.) Working in wood; (v.) Metal working, machinery; (vi.) Food and drink, or the preparation thereof; (vii.) Clothing and textile fabrics and fibrous materials; (viii.) Books, paper, printing, engraving; (ix.) Musical instruments; (x.) Arms and explosives; (xi.) Vehicles and fittings, saddlery and harness, etc.; (xii.) Shipbuilding, fittings, etc.; (xiii.) Furniture, bedding, etc.; (xiv.) Drugs, chemicals, and by-products; (xv.) Surgical and scientific appliances; (xvi.) Timepieces, jewellery, and plated ware; (xvii.) Heat, light, and energy; (xviii.) Leatherware (excepting harness and saddlery); (xix.) Minor wares not elsewhere included. It will be necessary to deal with these in detail.

2. **Industries of Class I.**—(i.) *General.* This class comprises the following:—Boiling-down and refining works; tanneries; wool-scouring and fellmongering works; chaff-cutting and corn-crushing mills. In Western Australia, however, bone mills are substituted for the first and bark mills for the third. These industries can be hardly described as factories in the ordinary sense. In the following particulars for 1906, "State total" denotes the total number of factories in the State, while "class-total" means total number of the same class in the Commonwealth:—

The total number of factories and average total number of persons employed therein in this class, form respectively 6.41 and 3.41 per cent. of the totals for the Commonwealth. The lack of particulars in respect of other matters renders it impossible to give a complete statement of proportions for the Commonwealth.

FACTORS OF PRODUCTION, INDUSTRIES OF CLASS I., TANNING, ETC., 1906.

Items.		N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	C'w'th.
Number of factories ...	...	256	305	48	111	14	8	742
Percentage on State total*	...	6.63	6.99	3.68	10.90	2.11	2.14	. .
„ „ class total*	...	34.50	41.10	6.47	14.96	1.89	1.08	...
Average number employés	...	3,209	2,841	538	972	159	90	7,809
Percentage on State total*	...	4.12	3.33	2.24	4.79	1.23	1.06	...
„ „ class total*	...	41.10	36.38	6.89	12.45	2.03	1.15	...
Value of land and buildings†	£	314,318	302,622	57,677	...	20,590	11,700	706,937
„ plant and machinery	£	245,696	211,451	92,550	...	10,630	9,800	570,127
Percentage on State total ...	...	2.96	3.27	2.16	...	1.57	1.16	...
Total salaries and wages ...	£	194,407	180,559	...	...	15,006	8,217	398,189
Percentage on State total ...	...	3.47	3.30	...	...	9.80	1.32	...

* See above. † Approximate.

Comparable figures exist only between 1903 and 1906. The developments for this period are indicated in the following table :—

DEVELOPMENT OF FACTORIES, CLASS I., TANNING, ETC., 1903 TO 1906.

State.	Number of Factories.				Number of Employés.				Approximate Value of Plant and Machinery.			
	1903.	1904.	1905.	1906.	1903.	1904.	1905.	1906.	1903.	1904.	1905.	1906.
									£	£	£	£
New South Wales	237	240	254	256	2,787	2,696	2,917	3,209	185,006	204,326	217,957	245,696
Victoria	324	317	317	305	2,976	2,664	2,839	2,841	196,627	204,921	211,059	211,451
Queensland ...	66	59	59	48	532	497	525	538	74,680	78,021	79,762	92,550
South Australia ...	(86)	86	96	111	863	863	853	972	*	*	*	*
Western Australia	10	16	15	14	106	186	223	159	8,330	14,113	13,240	10,630
Tasmania . .	33	33	10	8	283	276	100	90	21,377	18,331	7,600	9,800
Commonwealth ...	756	751	751	742	7,547	7,182	7,460	7,809	486,020	519,712	529,618	570,127

* Information not available. Totals exclusive.

(ii.) *Tanning, Fellmongery, etc.* (*a*) Tanning and fellmongering are the most important industries in Class I. Until quite recently the former has confined itself to the production of the coarser class of leathers, but lately the tanning of the finer leathers has been undertaken with very satisfactory results. The position of the indusry in the several States in 1906 was as follows ;—

TANNING, FELLMONGERY, AND WOOL-SCOURING, 1906.

Item.		N.S W	Vic.	Qld.	S.A.	W.A.	Tas.	C'wlth.
Number of factories	...	154	84	40	14	2	3	297
„ „ employes	...	2,427	1,657	513	344	61	56	5,058
„ „ male employés ...	...	2,418	1,655	*	344	61	56	4,534
„ „ female „ ...	...	9	2	*	nil	nil	nil	11
Actual horse-power of engines employed	...	2,012	1,152	499	246	59	40	4,008
Average time in operation during year	mths	10.13	10.40	*	*	12.00	12.00	...
Approx. value of lands and buildings	£	...	157,294	52,377	*	11,000	7,900	228,571
Approx. value of plant and machinery	£	172,553	114,951	84,750	*	5,500	6,600	384,354
Total amount of wages paid during year	£	155,244	123,677	*	*	7,172	5,790	291,883

* Information not obtainable. Totals are exclusive of these States.

(*b*) The development of tanning, fellmongering, and woolscouring industries during the period 1903-6 is shewn in the table on the next page, from which it will be seen that the decrease in the number of factories, due to the closing of a number of small establishments, was not accompanied by a corresponding decrease in the number of employés :—

NUMBER AND VALUE OF FACTORIES AND PERSONS EMPLOYED, AUSTRALIA, 1903 TO 1906.

State.	Number of Factories.				Number of Employés.				Value of Plant and Machinery (Approximate).			
	1903.	1904.	1905.	1906.	1903.	1904.	1905.	1906.	1903.	1904.	1905.	1906.
									£	£	£	£
New South Wales	173	160	166	154	2,365	2,187	2,228	2,427	146,618	152,673	156,830	172,553
Victoria	94	86	88	84	1,640	1,439	1,614	1,657	110,796	109,095	114,863	114,951
Queensland ...	54	50	48	40	480	459	477	513	66,170	70,738	70,246	84,750
South Australia ...	(14)	14	14	14	355	355	335	344	*	*	*	*
Western Australia	3	3	2	2	58	65	55	61	3,300	4,000	4,500	5,500
Tasmania ...	8	8	3	3	102	96	56	56	9,420	8,715	4,550	6,600
Commonwealth ...	346	321	321	297	5,000	4,601	4,765	5,058	336,304	345,221	350,989	384,354

* No information available. Totals exclusive.

(*c*) The production of leather in Australia for the years 1903 to 1906 has not been fully ascertained, hence the defects in the following table:—

NO. OF HIDES, SKINS, ETC., TANNED, AUSTRALIA, 1903 TO 1906.

State.	1903.	1904.	1905.	1906.
New South Wales	*	*	*	2,708,346
Victoria	1,206,257	1,189,581	1,077,346	1,135,969
Queensland	150,896†	127,519†	118,943†	222,916†
South Australia	*	*	*	*
Western Australia	55,060	27,903	25,956	30,416
Tasmania	91,212	147,444	291,600	42,117

* No information available.

† Also the following amount of Leather, in cwts.:—

Queensland	21,066	19,484	25,430	27,166

(*d*) The value of the annual export of Australian leather has increased from £520,211 in 1903 to £547,357 in 1906, though in 1904 a sharp fall occurred, due to the shortage through drought of skins and pelts. Of the total Great Britain takes £438,654; Belgium, £23,120; Cape Colony, £50,698; and New Zealand, £13,731. Of the total export New South Wales sends away a value of £303,277. Such leather as is produced in the other States is practically all consumed locally or exported to other parts of the Commonwealth.

It is not possible to ascertain from existing statistical records in what particular Australian State exported goods are produced, since all exports of Australian production are classed only as such, without reference to the producing State. In most cases, however, the State of production is also the exporting State.

The following table shews the totals of the Interstate exports and imports of each State of the Commonwealth for 1906:—

INTERSTATE EXPORTS AND IMPORTS OF LEATHER, 1906.

Item.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.
	£	£	£	£	£	£
Export from State ...	80,917	123,072	32,110	24,291	5,823	13,549
Import into State ...	101,816	62,414	32,467	32,202	29,789	21,074
Balance of Trade ...	— 20,899	+ 60,658	— 357	— 7,911	— 23,966	— 7,525

The total value of Interstate trade in Australian leather in 1906 was £279,762.

(*e*) The value of the imports of leather into Australia in the years 1903-6 was as follows :—

	1903.	1904.	1905.	1906.
Dutiable ...	£193,624	£294,962	£236,506	£359,017
Free ...	8,430	11,806	15,865	21,776

(*f*) For convenience of comparison, the values of the imports of boots and other manufactures of leather in the years 1903-6 are here stated :—

VALUES OF IMPORTS, LEATHER MANUFACTURES, 1903 TO 1906.

Year.	Boots and Shoes.			Leather.
	Men's, etc., of leather.	N.E.I.	Infants'.	Manufactures N.E.I.
	£	£	£	£
1903	162,580	56,485	52,637	42,459
1904	156,339	57,725	58,323	56,378
1905	113,755	59,265	48,042	53,876
1906	118,954	58,604	54,965	60,908

A comparison of the two foregoing tables shews that a considerable increase in the importation of leather was accompanied by a corresponding decrease in the importation of boots, due to the extension of the local boot-manufacturing industry.

3. **Industries of Class II.**—(i.) *General.* This class comprises (1) Oil and grease. (2) Soap and candles. Following are the chief particulars for 1906 :—

FACTORS OF PRODUCTION, INDUSTRIES OF CLASS II., OILS, ETC., 1906.

Items.		N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	C'wlth.
Number of factories		48	20	14	12	3	2	99
Percentage on State total		1.24	0.46	1.07	1.18	0.45	0.54	...
„ „ class total		48.48	20.20	14.14	12.12	3.03	2.03	...
Average number of employés		681	572	142	269	61	35	1,760
Percentage on State total		0.88	0.67	0.59	1.32	0.47	0.41	...
„ „ class total		38.69	32.50	8.07	15.28	3.47	1.99	...
Approx. value of land and buildings	£	172,698*	106,080	24,529	...	4,782	4,000	312,089
Approx. value of plant and machinery	£	158,157	109,816	33,599	†	8,216	4,300	314,088
Percentage on State total		1.91	1.70	0.78	...	0.44	0.51	1.45
Total amount of salaries and wages ...		42,366	44,773	†	†	6,418	3,600	97,157
Percentage on State total		0.75	0.82	...	...	0.42	0.58	...

* 1901. † Information not obtainable. Totals are exclusive of these States.

The factories of this class constitute 0.85 per cent. of the factories of the Commonwealth, and the average number of persons employed forms 0.77 per cent. of the total in all factories.

The changes in the industries of Class II. for the period 1903 to 1906 are set forth in the table hereunder :—

DEVELOPMENT OF FACTORIES, CLASS II., OILS, ETC., 1903 TO 1906.

State.	Number of Factories.				Average Number of Employés.				Value of Plant and Machinery; Approximate.			
	1903.	1904.	1905.	1906.	1903.	1904.	1905.	1906.	1903.	1904.	1905.	1906.
									£	£	£	£
New South Wales	52	54	47	48	625	595	660	681	132,901	139,057	153,083	158,157
Victoria	24	23	24	20	528	532	558	572	107,761	105,936	110,079	109,876
Queensland ...	22	25	21	14	150	151	142	142	33,013	34,929	34,303	33,599
South Australia ...	(11)	11	13	12	(202)	202	250	269	*	*	*	*
Western Australia	5	4	4	3	67	74	68	61	11,474	10,021	9,771	8,216
Tasmania ...	5	4	3	2	68	47	39	35	7,400	8,200	5,600	4,300
Commonwealth	119	121	112	99	1,649	1,601	1,717	1,760	292,549	298,143	312,786	314,088

* Information not obtainable. Totals exclusive.

(ii.) *Soap and Candle Factories.* The manufactures of soap and candles are the most important industries of Class II. The two are often carried on in the same establishment, so that it is impossible to separate them ; it may, however, be said that the manufacture of soap greatly preponderates.

(*a*) The following table shews the position of the industry in 1906 :—

SOAP AND CANDLE FACTORIES, 1906.

Item.	N.S.W.	Vic.	Q'ld.	S.A.	W.A.	Tas.	C'wlth.
Number of factories	41	15	14	8	3	2	83
„ „ employés	602	523	142	207	61	35	1,570
„ „ male employés	471	508	*	207	61	32	1,279
„ „ female „	131	15	*	*	*	3	149
Actual horse-power of engines employed ...	501	215	119	548	55	20	1,458
Average No. of months in operation during year	11.71	12.00	*	*	12.00	12.00	...
Approximate value of land and buildings £	*	96,000	24,529	*	4,782	4,000	129,311
„ „ plant and machinery £	121,313	104,244	33,599	*	8,216	4,300	271,672
Total amount of wages paid during year £	34,618	41,635	*	*	6,418	3,600	86,271

* Information not available. Totals exclusive of these States.

(*b*) DEVELOPMENT OF SOAP AND CANDLE FACTORIES, 1903 TO 1906.

State.	Number of Factories.				Average Number of Employés.				Approximate Value of Plant and Machinery.			
	1903.	1904.	1905.	1906.	1903.	1904.	1905.	1906.	1903.	1904.	1905.	1906.
									£	£	£	£
New South Wales	47	46	40	41	520	508	574	602	108,277	114,755	119,717	121,313
Victoria	20	19	20	15	485	492	500	523	103,411	101,486	105,529	104,244
Queensland ...	22	25	21	14	159	151	142	142	33,013	34,929	34,303	33,599
South Australia...	(7)	7	9	8	(180)	180	222	207	*	*	*	*
Western Australia	5	4	4	3	67	74	68	61	11,474	10,021	9,771	8,216
Tasmania ...	5	4	3	2	68	47	39	35	7,400	8,200	5,600	4,300
Commonwealth	106	105	97	83	1,479	1,452	1,545	1,570	263,575	269,391	274,920	277,672

* Information not available. Totals exclusive.

(*c*) Owing to shortage of material, caused through drought, these industries reached their lowest point for any recent period in 1903. The production for the years 1903 to 1906 was as follows :—

PRODUCTION OF SOAP AND CANDLES IN AUSTRALIA, 1903 TO 1906.

State.	Soap.				Candles.			
	1903.	1904.	1905.	1906.	1903.	1904.	1905.	1906.
	cwt.	cwt.	cwt.	cwt.	lbs.	lbs.	lbs.	lbs.
New South Wales ...	199,807	208,677	212,658	221,834	3,231,842	3,984,035	4,226,082	4,799,898
Victoria	138,045	162,126	150,261	154,570	5,085,424	4,650,352	4,709,488	4,826,528
Queensland	54,684	58,033	55,167	64,130	*	*	*	*
South Australia	*	*	*	*	*	*	*	*
Western Australia ...	27,232	27,584	28,005	26,960	1,789,106	1,989,610	1,626,000	1,567,768
Tasmania	14,320	11,760	8,360	7,360	925,120	620,480	479,360	703,360
Commonwealth ...	434,088	468,180	454,451	474,854	11,031,492	11,244,477	11,040,930	11,897,554

* Not available. Totals exclusive of these States.

From the following table, shewing the export of Australian-made soap and candles in the years 1903 to 1906, it will be seen that apart from the exports of soap "n.e.i.," chiefly on account of one large firm, the volume of trade is very small :—

EXPORT OF AUSTRALIAN-MANUFACTURED SOAP AND CANDLES.

1903 TO 1906.

Item.		1903.	1904.	1905.	1906.
Soap—Perfumed, Toilet, etc.	£	697	411	717	1,674
Soap, n.e.i.	£	41,513	30,749	37,647	44,055
Candles	£	83	141	209	243

(*d*) The values of interstate transfers in 1906 of Australian-made soap and candles are as follows:—

SOAP AND CANDLES OF AUSTRALIAN MANUFACTURE.—INTERSTATE TRANSFERS, 1906.

SOAP.

Exports or Imports.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	West. Aust.	Tasmania.
Export from State ... £	53,789	35,130	538	22,958	12	566
Import into State ... £	35,904	21,368	14,713	8,321	16,490	16.197
Balance of trade ... £	+ 17,885	+ 13,762	— 14,175	+ 14,637	— 16,478	— 15,631

CANDLES.

Export from State ... £	15,288	19,804	75	12,840	...	...
Import into State ... £	17,284	11,016	4,999	560	2,542	11,606
Balance of trade ... £	— 1,996	+ 8,788	— 4,924	+ 12,280	— 2,542	— 11,606

The total interstate trade in soap of Australian manufacture in 1906 was valued at £112,993, and in candles of Australian manufacture at £48,007.

The value of imports of soap and candles into Australia in the years 1903-6 was as shewn hereunder:—

IMPORTS OF SOAP AND CANDLES, 1903-6.

Item.		1903.	1904.	1905.	1906.
Soap	£	59,632	80,481	78,168	79,482
Candles	£	66,505	71,153	55,140	36,997

The soap imported is chiefly toilet soap of finer grades than are extensively made in the Commonwealth. The importation of candles during the four years under review has shewn a considerable falling-off.

4. **Industries of Class III.**—(i.) *General.* This class comprises the following items, viz.:—Bricks and tiles; glass, including bottles; glass, ornamental; lime, plaster. cement, etc.; marble, slate, etc.; modelling, etc.; pottery and earthenware.

(*a*) The following table gives the particulars of the class for the year 1906:—

FACTORS OF PRODUCTION, INDUSTRIES OF CLASS III., STONE, GLASS, ETC., 1906.

Items.		N.S.W.	Vic.	Q'ld.	S.A.	W.A.	Tas.	C'wth.
Number of factories		252	208	32	59	36	23	610
Percentage on State total		6.53	4.77	1.68	5.80	5.90	3.77	...
" class total		41.30	34.10	5.25	9.67	5.90	3.77	...
Average number of employés		3,877	3,209	385	543	550	215	8,779
Percentage on State total		4.98	3.77	1.61	2.67	4.26	2.47	...
" class total		44.16	36.55	4.39	6.19	6.26	2.45	...
Approximate value of land and buildings	£	308,189*	268,611	38,986	†	45,425	19,708	680,919
Approximate value of plant and machinery	£	426,543	183,301	38,988	†	55,194	14,580	718,606
Percentage on State total		5.14	2.84	0.91	†	2.96	1.73	...
Total amount of wages paid during year	£	300,212	265,508	†	†	62,127	17,391	645,238
Percentage on State total		5.37	4.86	...	†	4.06	2.80	...

* 1901. † Information not available. Totals are exclusive of these States.

(*b*) The total number of factories in this class forms 5.27 per cent. of the total number of factories in the Commonwealth, and the corresponding percentage of employés is 3.84. Glass bottles of Australian manufacture to the value of £7343 were exported in 1903 and £16,409 in 1906. There is also a small export trade in pottery and earthenware of local manufacture. Of the 193,267 dozen glass bottles exported, New Zealand took 180,817 dozen, valued at £15,861, and Cape Colony 8370 dozen, valued at £303; the balance went to Japan and the South Seas. New South Wales exported 59,005 dozen bottles, valued at £3986, Victoria and the other States of the Commonwealth 134,262 dozen, valued at £12,423. Decorative pottery of artistic design and good quality is being produced experimentally in Australia, and gypsum works exist in Victoria and South Australia, but particulars of output or export are not available. There is also a growing manufacture of stained glass, but the manufacture of bricks and cement are the most important branches. The preponderance of New South Wales in the value of plant and machinery division is due to the existence of large cement works in that State. 239,260 cwt. of cement, gypsum, etc., valued at £33,856, were transferred by New South Wales to other States in 1906, out of total interstate transfers amounting to 317,392 cwt., valued at £42,544. 793,928 cwt. of cement, gypsum, etc., valued at £71,765, were imported into Australia in 1906, so that there is considerable room for expansion of the Australian manufacture of the article.

(*c*) DEVELOPMENT OF FACTORIES IN CLASS III., 1903 TO 1906.

State.	Number of Establishments.				Number of Employés.				Value of Plant and Machinery, Approximate.			
	1903.	1904.	1905.	1906.	1903.	1904.	1905.	1906.	1903.	1904.	1905.	1906.
									£	£	£	£
New South Wales	226	231	238	252	3,073	3,191	3,413	3,877	354,488	377,895	398,957	426,543
Victoria	191	193	204	208	3,076	2,906	3,011	3,209	160,052	167,577	162,215	183,301
Queensland ...	79	68	65	32	422	389	425	385	59,574	42,291	47,340	38,988
South Australia...	(46)	46	49	59	(419)	419	498	543	*	*	*	*
Western Australia	49	48	45	36	700	727	683	550	54,842	60,950	82,398	55,194
Tasmania ...	26	29	24	23	210	275	255	215	14,790	16,270	16,477	14,580
Commonwealth	617	615	625	610	7,900	7,907	8,285	8,799	643,746	664,983	707,387	718,606

* Information not obtainable. Totals exclusive.

5. **Industries of Class IV.**—(i.) *General*. The industries included in this class are:—(*a*) Box and case-making, (*b*) cooperage, (*c*) joinery, (*d*) sawmills, (*e*) wood-turning, etc.

(*a*) The following table gives particulars of the several points of interest:—

FACTORS OF PRODUCTION, INDUSTRIES OF CLASS IV., WORKING IN WOOD, ETC., 1906.

Items.	N.S.W.	Vic.	Q'ld.	S.A.	W.A.	Tas.	C'wlth.
Number of factories	457	270	197	60	68	67	1,119
Percentage on State total	11.85	6.19	15.11	5.89	10.23	17.96	...
„ „ class total	40.84	24.13	17.61	5.36	6.08	5.98	...
Average number of employés	5,205	4,217	2,626	839	3,540	1,920	18,347
Percentage on State total	6.69	4.95	10.96	4.13	27.45	22.59	...
„ „ class total	28.37	22.98	14.32	4.57	19.30	10.46	...
Approx. value of land and buildings £	432,837*	223,296	175,651	†	197,539	103,435	1,132,758
„ „ plant and machinery £	365,780	211,487	268,985	†	436,546	102,061	1,384,859
Percentage on State total ...	4.41	3.28	6.27	...	23.45	12.12	...
Total amount of salaries and wages £	376,912	313,074	†	†	444,847	143,894	1,278,727
Percentage on State total	6.74	5.73	...	...	29.05	23.13	...

* 1901. † Information not available. Totals exclusive of these States.

The factories of this class constitute 9.66 per cent. of the total for the Commonwealth, and the average number of persons employed 8.02 per cent. of the total in all factories.

(*b*) The following table shews the progress of this class of industry in Australia during the years 1903-6:—

DEVELOPMENT OF FACTORIES IN CLASS IV., WOODWORKING, ETC., 1903 TO 1906.

State.	Number of Factories.				Number of Employés.				Value of Plant and Machinery (Approximate).			
	1903.	1904.	1905.	1906.	1903.	1904.	1905.	1906.	1903.	1904.	1905.	1906.
									£	£	£	£
N.S.W. ...	430	438	449	457	5,167	4,923	5,244	5,205	368,512	371,605	376,665	365,780
Victoria ...	268	268	271	270	3,713	3,747	4,016	4,217	182,902	189,163	195,754	211,487
Q'land ...	236	225	215	197	2,272	2,376	2,300	2,626	277,410	275,384	259,398	268,985
S. Aust. ...	(38)	38	44	60	(677)	677	653	839	...	...	...	...
W. Aust. ...	59	73	68	68	3,566	3,340	3,478	3,540	625,053	528,787	537,008	436,546
Tasmania	79	80	79	67	1,103	1,222	1,247	1,920	92,332	88,570	83,891	102,061
C'wealth	1,110	1,122	1,126	1,119	16,498	16,285	16,938	18,347	1,546,209	1,453,509	1,452,716	1,384,859

(ii.) *Sawmills.*—(*a*) The most important industry in this class is the sawmilling industry, of which particulars are given below. To compare this class of industry in the several States all saw mills, including forest mills and joinery works, are combined, this being rendered necessary by a different arrangement of these industries in the statistics of different States.

SAW MILLS, FOREST AND OTHER, AND JOINERY WORKS, 1906.

Items.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	C'wlth.
Number of factories	402	213	179	45	68	67	974
„ „ employés	4,555	3,628	2,527	717	3,540	1,907	16,874
„ „ male employés	4,538	3,619	*	717	3,537	1,898	14,309
„ „ female „	17	9	*	nil	3	9	38
Actual horse-power of engines employed...	6,159	3,830	4,253	524	2,773	1,813	19,352
Average No. of mths. in operation during yr.	10.96	8.8	*	*	11.81	11.00	...
Approx. value of land and buildings £	*	172,938	150,601	*	197,539	103,435	624,513
Approx. value of plant and machinery £	317,433	192,794	258,821	*	436,546	102,061	1,307,655
Total amount of wages paid during year £	326,856	274,022	*	*	444,847	143,894	1,189,619

* Information not available. Totals are exclusive of these States.

The foregoing table discloses the importance of the forest saw-milling industry in Western Australia and Tasmania, especially in the former State.

(*b*) The condition of the sawmilling industry is best shewn by particulars of output, where such are available, and of export. Australian undressed timber was in 1906 exported to fifty-two separate countries, the largest customer being India. A considerable quantity was sent to England, South America, the East, and New Zealand. Small quantities of dressed timber, mouldings and doors of Australian manufacture, were also exported. The exported timber was principally for use as railway sleepers, wood and block paving, piles, and works where a durable, damp-resisting wood is required.

(*c*) The following table shews the production of the sawmilling industry from 1901 to 1906:—

QUANTITY OF LOCAL TIMBER SAWN OR HEWN, 1901 TO 1906.

State.	1901.	1902.	1903.	1904.	1905.	1906.
	Sup. feet.	Sup. feet.	Sup. feet.	Sup. feet.	Sup. feet.	Sup. feet.
N.S.W. ...	96,907,000	90,308,834	100,408,000	117,029,000	112,580,000	119,337,000
Victoria ...	46,495,885	40,494,660	38,841,322	49,250,000	47,635,358	51,103,000
Queensland	140,443,099	72,478,951	69,508,800	71,293,811	73,930,279	82,801,846
South Aust.	*	*	*	*	*	*
West Aust.	122,413,865	124,005,005	126,729,833	143,594,953	137,250,340	136,294,697
Tasmania ...	46,907,592†	24,531,922	35,196,700	34,760,628	40,273,429	39,498,697
C'wealth.‡...	453,167,441	351,819,372	370,684,655	415,928,392	411,669,406	429,035,240

* Figures not available. † Estimated on basis of value of timber sawn in 1902. ‡ Exclusive of South Australia.

(*d*) The following table shews the quantity and value of Australian timber exported from each State oversea and also transferred between the States during the year 1906. The timber may probably be taken to have been produced in the exporting State:—

EXPORT OF AUSTRALIAN TIMBER, 1906.

Exports.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
Sawn, super. ft.	48,235,648	145,812	5,163,908	...	85,418,927	13,703,450	152,161,083
Value ... ... £	318,745	1,745	27,652	...	567,519	47,673	962,211
Logs, super. ft.	1,456,972	2,298	41,764	...	140,349	96,324	1,737,707
Value ... ... £	10,500	32	490	...	929	685	12,636
Interstate transfers, value £	33,630	5,041	58,015	9,803	184,096	38,104	283,694

Reference to wood by-products will be made under another heading.

6. **Industries of Class V.**—(i.) *General.* This class comprises the following items:—Agricultural implements; brass and copper; cutlery; engineering; galvanised ironworking; ironworks and foundries; lead mills; railway carriages, rolling stock, etc.; railway and tramway workshops; smelting and chlorinating works; stoves and ovens; tinsmithing; wireworking; other metal works.

(*a*) The following table shews the position of this class in 1906. These factories form 12.04 per cent. of the factories of the Commonwealth, and employ 18.99 per cent. of the average number of persons employed therein:—

FACTORS OF PRODUCTION, INDUSTRIES OF CLASS V., METAL-WORKING, ETC., 1906.

Items.		N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
Number of factories	...	376	600	183	132	75	28	1,394
Percentage on State total ...	...	9.74	13.76	14.03	12.97	11.28	7.51	...
„ class total ...	...	26.97	43.04	13.13	9.47	5.38	2.01	...
Average number of employés ...	...	15,339	13,058	3,819	6.793	2,516	1,906	43,431
Percentage on State total ...	...	19.71	15.32	15.94	33.45	19.51	22.43	...
„ class total ...	...	35.32	30.07	8.79	15.64	5.79	4.39	...
Approx. value of land and buildings	£	2,309,354*	2,191,925	913,024	†	410.907	202,249	6,027,459
Approx. value of plant and machinery	£	1,511,896	879,715	385,228	†	294,866	282,302	3,354,007
Percentage on State total ...	...	18.23	13.64	8.99	...	15.84	33.53	...
Total amount of salaries, etc. ...	£	1,502,331	1,129,102	†	†	350,614	196,240	3,178,287
Percentage on State total ...	...	26.87	20.65	...	..	22.90	31.55	...

* 1901. † Information not available, Totals exclusive of these States.

NOTE.—This table is exclusive of Queensland railway workshops, particulars whereof are not available.

(*b*) A distribution of the various branches of industries included in Class V. in the six States is of interest and is given hereunder :—

INDUSTRIES IN CLASS V., 1906.

Industry.	N.S.W.		Victoria.		Queensland.		South Aust.		West Aust.		Tasmania.	
	Fac.	H'nds	Fac.	H'nds	Fac.	H'nds	Fac.	H'nds	Fac.	H'nds	Fac.	Hnds
1. Agric. implements	17	440	53	1,747	8	117	49	874	6	56	...	...
2. Brass and copper	11	233	47	611	3	16	8	96	60	1,088	...	...
3. Cutlery ...	5	25	13	48	...	...	...	...			...	...
4. Engineering ...	118	3,229	251	5,643	45	1,270	39	1,425			15	331
5. Galv. ironworking	37	587	‡	...	40	417	18	341			...	...
6. Ironw'ks & f'dries	50	1,579	*	...	*	*	*	*			...	...
7. Lead mills ...	2	21	4	57	...	...	...	...			...	...
8. Rly. carriages, etc.	4	556	15	2,290	...	...	8	1,862	...	...	...	...
9. R'lway, etc., shops	21	3,628			§1	35			6	1,224	3	427
10. Smelting, etc. ...	41	3,563	110	805	13	1,357	7	1,886	61	148	5	1.060
11. Stoves and ovens...	12	302	10	195	6	159	3	309	...		...	...
12. Tinsmithing ...	38	462	60	1,052	20	214	†	†	2		5	85
13. Wireworking ...	8	411	14	231	1	9	...	...	...	...	...	...
14. Others ...	12	303	23	379	46	225	...	...	...	...	...	...

* Included in Engineering. † Included in Galvanised ironworking. ‡ Included in Tinsmithing.
§ Does not include repairing shops.

(*c*) The following table shews the progress of this class of industry during the years 1903-6 :—

DEVELOPMENT OF WORKS IN CLASS V., 1903 TO 1906.

State.	Number of Factories.				Average Number of Employés.				Approximate Value of Plant and Machinery.			
	1903.	1904.	1905.	1906.	1903.	1904.	1905.	1906.	1903.	1904.	1905.	1906
									£	£	£	£
N.S.W. ...	315	338	352	376	12,851	13,339	13,831	15,339	1,356,969	1,483,034	1,529,901	1,511,896
Victoria ...	545	568	574	600	10,350	11,027	11,638	13,058	858,943	850,196	880,862	879,915
Q'sland ...	370	389	385	*183	3,215	2,889	3,597	*3,819	399,976	387,635	385,969	*385,228
Sth. Aust.	(93)	93	119	132	(5,342)	5,342	6,333	6,793	...	...	...	...
Wst. Aust.	53	64	63	75	2,065	2,496	2,480	2,516	131,962	313,242	287,032	294,866
Tasmania	38	32	35	28	1,763	2,071	2,182	1,906	267,038	150,533	178,398	282,302
C'wealth	1,414	1,484	1,528	1,394	35,586	37,164	40,061	43,431	3,014,888	3,184,660	3,262,162	3,354,007

* Exclusive of small shops employing less than four persons.

The condition of these industries is discussed under their respective heads. The general growth of the metal industry is satisfactory.

(ii.) *Agricultural Implement Factories.* (*a*) The following table shews the progress of this industry during the years 1903 to 1906:—

AGRICULTURAL IMPLEMENT WORKS, 1903 TO 1906.

State.	Number of Factories.				Number of Employés.				Approximate value of Plant and Machinery.			
	1903.	1904.	1905.	1906.	1903.	1904.	1905.	1906.	1903.	1904.	1905.	1906.
									£	£	£	£
New South Wales	8	11	17	17	56	114	386	440	3,085	4,670	11,524	12,850
Victoria	52	50	53	53	1,107	1,496	1,624	1,747	62,791	62,163	65,203	62,808
Queensland ...	...	...	...	8	...	...	...	117	...	...	...	11,470
South Australia ...	(30)	30	45	49	565	504	750	874	...	...	...	...
Western Australia	3	4	4	6	41	39	37	56	1,650	2,150	2,710	2,470
Tasmania ...	...	...	...	...	...	...	...	...	...	...	...	...
Commonwealth	93	95	119	133	1,769	2,153	2,797	3,234	67,526	68,983	79,437	89,598

(*b*) The value of imports and exports of agricultural machinery and implements in the years 1903 to 1906 was as follows:—

AGRICULTURAL MACHINERY, VALUE OF IMPORTS AND EXPORTS, 1903 TO 1906.

Year.	Imports.			Exports.			
				Australian Produce.		Other Produce.	
	Reapers & Binders.	Harvesters.	N.E.I. and Free.	N.E.I. and Free.	Harvesters.	N.E.I. and Free.	Harvesters.
	£	£	£	£	£	£	£
1903	132,588	...	322,539	51,253	...	6,745	...
1904	148,746	...	429,615	23,103	...	6,453	...
1905	14,549	114,395	232,495	5,272	30,110	11,910	82
1906	16,254	58,024	208,246	16,692	32,632	13,059	56

No information is available concerning the actual production or the number and value of the machines and implements of local production used in Australia.

The extraordinary fall in the importation of reapers and binders from 1904 to 1905 was accompanied by a corresponding rise in the importation of the stripper harvester, which seems for the present to have supplanted the reaper and binder in the estimation of the farming population.

(*c*) The following table gives particulars of the agricultural implement works of Australia:—

AGRICULTURAL IMPLEMENT WORKS, 1906.

Items.	N.S.W.	Victoria	Q'land.	S.Aust.	W.A.	Tas.	C'wlth.
Number of factories	17	53	8	49	6	Nil	133
Number of employés	440	1,747	117	874	56		3,234
Number of male employés	434	1,743	*	874	56		3,107
Number of female „	6	4	*	nil	nil		10
Actual horse-power of engines employed	121	683	92	480	40		1,416
Average number of months in operation during year	11.99	11.7	*	*	12.00		...
Approx. value of land and buildings £	*	70,600	7,244	*	3,100		80,944
Approx. value of plant and machinery £	12,850	62,808	11,470	*	2,470		89,598
Total amount of wages paid during year £	37,014	148,610	*	*	6,309		191,933

* No information available. Totals are exclusive of these States.

(*d*) The manufacture of agricultural implements is one of the few specialised Australian industries, and is of particular interest owing to the fact that it is one of the first industries to which what has been called the "New Protection" system is sought to be applied. The nature of the machines manufactured may be gathered from the machines scheduled in the Customs tariff, 1906-7, which includes stripper harvesters, strippers, stump-jump ploughs, disc cultivators, winnowers, corn-shellers and baggers, drills, and other implements usually employed in agriculture. The stripper-harvester, which combines the stripper with a mechanism for winnowing and bagging grain, is an Australian invention, and is now in use all over the world.

The principal States of destination of exports of Australian-made machinery were :—New Zealand, Cape Colony, the Argentine and Uruguay ; £29,652 worth of harvesters being sent to the Argentine. The whole of the harvester export, and a considerable portion of the balance of the implements, were shipped in Victoria, which is the country of production.

(*e*) The value of interstate exports of agricultural machinery in 1906 is shewn in the following table :—

INTERSTATE EXPORTS OF AGRICULTURAL IMPLEMENTS OF AUSTRALIAN PRODUCTION IN 1906.

Items.		N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
Implements, etc., n.e.i. exported	£	4,713	71,500	468	38,043	25	59	114,808
Harvesters, exported . .	£	424	99,525	120	13,147	...	...	113,116
Free, exported	£	425	5,404	...	2,045	...	120	7,874

(*f*) By the Customs Tariff Act 1906, certain duties were imposed upon importations of stripper harvesters and other agricultural machinery, in order to encourage and assist the manufacture of these articles in Australia. By the same Act were fixed the maximum cash prices at which such machinery, when manufactured in Australia, might be sold, and the Executive received authority to reduce the Customs duties by so much as one-half the amount fixed by the Act, if the fixed cash prices were exceeded. By the Excise Tariff Act 1906 duties of excise were imposed upon the same machinery, unless it be manufactured in the Commonwealth under conditions as to the remuneration of labour which were in one way or another declared to be fair and reasonable. These statutes were the first application of the principles of the "New Protection," a description of which will be found elsewhere in this Year Book.

(iii.) *Engineering, Ironfoundry Works and Metal Trades.* (*a*) Included under this head are all the metal trades, except agricultural implements, railway shops and smelting and chlorination works. This combination is rendered necessary by the limited classification adopted by some of the States. The following are the particulars of the trades :—

ENGINEERING, IRONFOUNDRY WORKS AND METAL TRADES, 1906.

Items.	N.S.W.	Vic.	Q'ld.	S.A.	W.A.	Tas.	C'wlth.
Number of factories	293	422	161	68	62	20	866
" employés	7,152	8,225	2,310	2,171	1,088	419	21,365
" male employés	7,152	8,156	*	2,171	1,082	414	18,975
" female "	...	69	*	...	6	5	80
Actual horse-power of engines employed	3,605	3,610	887	834	617	213	10,276
Average number of months in operation during year	11.9	11.9	*	*	11.83	12	...
Approx. value of land and buildings £	*	572,548	190,819	*	94,539	22,565	874,921
" " plant and machinery £	502,604	589,975	177,600	*	97,019	36,114	1,402,562
Total amount of wages paid during year £	576,642	646,160	*	*	136,010	37,591	1,390,096

* Information not available. Totals are exclusive of these States.

Besides small trades, which supply local domestic requirements, there are now a number of large and important establishments which engage in the manufacture of limited classes of machinery and implements. Pig iron is at present imported for use or scrap is worked up. Notwithstanding the drawbacks caused by the necessity of importing raw material (soon, it is hoped, to be remedied), manufactures of iron are successfully carried on in Australia. The manufacture of mining and smelting machinery forms an important section of this industry, and many Australian mines have been locally equipped.

(*b*) The table hereunder shews the number of engineering works, the hands employed therein, and the value of plant and machinery during the years 1903-6 :—

DEVELOPMENT OF ENGINEERING WORKS, ETC., 1903 TO 1906.

State.	Number of Factories.				Number of Employés.				Value of Plant and Machinery (Approximate).			
	1903.	1904.	1905.	1906.	1903.	1904.	1905.	1906.	1903.	1904.	1905.	1906.
									£	£	£	£
N.S.W. ...	253	273	271	293	6,146	6,057	6,410	7,152	482,654	495,744	491,938	502,604
Victoria ...	377	386	395	422	6,690	6,880	7,358	8,225	579,445	569,935	588,490	589,975
Q'land ...	*	*	*	161	*	*	*	2,310	*	*	*	177,600
S. Aust. ...	†60	†60	59	68	†2,968	†2,968	2,083	2,171	*	*	*	*
W. Aust....	28	34	31	62	956	1,089	1,002	1,088	89,875	100,338	88,850	97,019
Tasmania	28	20	23	20	486	502	463	419	30,038	36,073	44,118	36,114
C'wealth	746	773	779	866	17,246	17,496	17,316	21,365	1,182,012	1,202,090	1,213,396	1,403,312

* Not obtainable. † Includes railway worskshops. Figures for 1903 are unobtainable ; those given are for 1904.

(*c*) The following table shews the value of the exports of Australian metal manufactures for the years 1903-6, excluding agricultural implements and machinery, which are dealt with above:—

AUSTRALIAN METAL MANUFACTURES.—VALUE OF EXPORTS, 1903 TO 1906.

Item.	1903.	1904.	1905.	1906.
Machines and machinery—	£	£	£	£
Mining machinery	204	1,990	3,828	9,440
Other machinery	22,877	20,800	21,122	19,326
Total	23,081	22,790	24,950	28,766
Other metal manufactures—				
Bolts and nuts	393	420	319	466
Nails, all kinds	703	791	899	908
Pipes and tubes, iron and steel ...	1,499	4,017	2,792	508
Wire-netting	5,602	6,122	2,852	1,747
Other manufactures	19,713	27,587	37,228	39,882
Total other metal manufactures ...	27,910	38,937	44,090	43,511
Total...	50,991	51,727	69,040	72,277

The principal customer for these articles is New Zealand. A small trade is also done with the Philippine Islands and the South Seas. The greater part of the mining machinery, chiefly dredging plant, was sent to the Straits Settlements.

(*d*) The value of interstate trade in mining machinery of Australian manufacture in 1906 was as follows:—

MINING MACHINERY OF AUSTRALIAN MANUFACTURE—INTERSTATE TRANSFERS, 1906.

Items.		N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.
Export from State	£	5,605	53,559	50	30,213	55	29
Import into State	£	36,909	2,145	25,239	6,160	8,176	10,882
Balance of trade	£	— 31,304	+ 51,414	— 25,189	+ 24,053	— 8,121	— 10,853

The total value of mining machinery of Australian manufacture transferred from State to State was £89,511.

(*e*) The following table of imports for 1906 is interesting as indicating the market available for Australian factories. Compared with the £5,000,000 of imports the £72,000 of Australian exports seem a very small sum.

VALUE OF IMPORTS INTO AUSTRALIA OF MACHINES AND MANUFACTURES OF METAL, 1906.

Machines.	Value.	Metal Manufactures.	Value.
	£		£
Cash registers, computing machines	15,118	Axles and springs	89,412
Cream separators, testers, and pasteurisers	144,032	Bolts and nuts	44,746
Engines—Fire	3,847	Cutlery (not plated)	140,271
Gas and oil	129,955	Mixed	20,609
High-speed and turbine	1,256	Nails—Horseshoe	12,397
Portable and traction	108,815	Wire and others	62,025
Other	66,574	Pipes and tubes	358,821
Mangles, clothes wringers, etc., and parts	9,144	Plated-ware and plated cutlery	171,007
Electrical	212,070	Wire—Iron and steel	520,166
Mining	75,106	Barbed	73,177
Printing	112,674	Netting	521,788
Sewing, stitching, and knitting	140,877	Other	47,192
Typewriters	50,525	Metal manufactures indefinitely described	969,333
Weighing machines	23,834	Total metal manufactures £	3,080,944
Machines indefinitely described and parts	798,556		
Total machines £	1,892,383	Total machines and metal manufactures	4,923,327*

* Exclusive of agricultural implements and machinery.

(iv.) *Railway Carriages and Rolling Stock, Railway and Tramway Workshops.* (*a*) The railway workshops of Australia form an important item in the metal and machinery class, and are chiefly State institutions. The following table gives the details concerning them, but includes also private establishments manufacturing rolling stock :—

RAILWAY CARRIAGES AND ROLLING STOCK, RAILWAY AND TRAMWAY WORKSHOPS, 1906.

Items.	N.S.W.	Victoria	Q'lnd.†	S. Aust.	W. Aust.	Tas.	C'w'lth.
Number of factories	25	15	1	8	6	3	58
Number of employés	4,184	2,290	35	1,862	1,224	427	10,022
Number of male employés ...	4,171	2,285	*	1,862	1,222	427	9,967
Number of female " ...	13	5	*	nil	2	nil	20
Actual h.p. of engines employed	1,629	511	25	665	3,446	*	6,276
Average number of months in operation during year	11.50	12.00	*	*	12.00	12.00	...
Approx. value of land and buildings £	*	259,414	*	*	391,909	112,500	763,823
Approx. value of plant and mach'ny £	288,384	164,802	1,130	*	142,807	62,360	659,483
Total amt. of wages paid during year £	478,937	281,507	*	*	180,198	47,947	988,679

* Information not available. Totals of these items are exclusive of these States. † Does not include repairing shops.

(v.) *Smelting, Chlorination, and other Ore-reducing and Metal-recovery Works.* (*a*) The following are the particulars of this section of the metal industry :—

SMELTING, CHLORINATION, AND OTHER ORE-REDUCING AND METAL-RECOVERY WORKS, 1906.

Items.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	C'wlth.
Number of factories	41	110	13	7	3	5	179
Number of employés	3,563	805	1,357	1,886	148	1,090	8,849
Number of male employés	3,563	805	1,357	1,886	148	1,090	8,849
Number of female "	...	...	...	...	...	...	...
Actual horse-power of engines employed	7,070	363	1,818	2,680	350	2,967	15,248
Average No. of months in operation during year	11.35	10.12	...	...	12.00	12.00	...
Approximate value of land and buildings £	...	16,467	14,900	...	8,690	...	39,057
Approximate value of plant and machinery £	708,058	62,130	195,028	...	52,570	183,828	1,201,604
Total amount of wages paid during year £	409,738	52,735	...	...	28,097	110,702	601,272

Many mines in all the States now smelt a considerable portion of their own mineral production. General smelting works have been erected in New South Wales, South Australia and Tasmania. Great energy has been directed to the discovery of processes suitable to the reduction of Australian ores, and several new systems have in consequence been evolved. In New South Wales iron-smelting has been commenced several times, so far back in the first instance as fifty years ago, but has not been continuously carried on. Recently large iron-smelting works have been erected at Eskbank, near Lithgow. In this connection may be mentioned an Australian process, which proposes to produce steel direct from iron ore. A company has been formed to exploit the invention, and satisfactory experiments have apparently been made, and large iron and coal areas in New South Wales and Victoria have been acquired to supply the crude material. The large number of establishments, as compared with the number of hands employed, shewn for Victoria, is due to the inclusion of chlorination works in gold mines.

7. **Industries of Class VI.**—(i.) *General.* (*a*) This class includes Bacon-curing, butter factories, butter and margarine, cheese factories, condensed milk, meat and fish-preserving, biscuits, confectionery, cornflour, oatmeal, etc., flour mills, jam and fruit canning, pickles, sauces, and vinegar, sugar mills, sugar-refining, aerated waters, cordials, etc., breweries, condiments, coffee, spices, etc., distilleries, ice and refrigerating, malting, tobacco and cigars, etc.

The total number of factories engaged in this class of industry is 18.80 per cent. of the total factories in the Commonwealth, and the average total number of employés in this class is 16.06 per cent. of the total number in the Commonwealth.

The following are particulars of the class :—

FACTORS OF PRODUCTION. INDUSTRIES OF CLASS VI. FOOD AND DRINKS, 1906.

Items.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	C'wlth.
Number of factories	707	646	353	242	155	74	2,177
Percentage on State total	18.31	14.82	27.07	23.77	23.31	19.84	...
" class total	32.48	29.67	16.21	11.12	7.12	3.40	...
Average number of employés ...	11,607	12,069	7,549	2,780	1,544	1,171	36,720
Percentage on State total	14.91	14.16	31.51	13.69	11.97	13.78	..
" class total	31.61	32.87	20.56	7.57	4.20	3.19	...
Approx. value of land and buildings £	*2,309,354	2,191,925	913,024	†	410,907	202,249	6,027,459
Approx. value of plant and mach'nr'y £	2,537,270	1,482,626	2,498,379	†	290,854	120,176	6,929,305
Percentage on State total	30.59	22.99	58.34	...	15.62	14.27	...
Total amount of salaries and wages paid during year ... ... £	824,083	857,769	†	†	178,301	64,295	1,924,448
Percentage on State total	14.74	15.69	...	...	11.65	11.35	...

* 1901. † Information not available. Totals of items are exclusive of these States.

(*b*) The progress in recent years of this class is shewn in the following table:—

DEVELOPMENT OF MANUFACTORIES ENGAGED IN THE PREPARATION OF ARTICLES OF CLASS VI., FOOD AND DRINK, 1903 TO 1906.

State.	Number of Factories.				Number of Employés.				Approximate Value of Plant and Machinery.			
	1903.	1904.	1905.	1906.	1903.	1904.	1905.	1906.	1903.	1904.	1905.	1906.
									£	£	£	£
N.S.W. ...	631	649	677	707	10,469	10,888	11,546	11,607	2,241,324	2,410,902	2,505,353	2,537,270
Victoria ...	621	638	629	646	10,602	10,660	11,272	12,069	1,345,488	1,354,769	1,391,222	1,482,626
Q'land ...	476	444	444	353	4,926	5,871	6,452	7,549	2,314,575	2,621,711	2,381,012	2,498,379
S. Aust. ...	251	251	260	242	2,951	2,951	2,910	2,780	*	*	*	*
W. Aust. ...	133	145	147	155	1,309	1,340	1,484	1,544	236,058	242,243	253,726	290,854
Tasmania	84	95	96	74	1,504	1,323	1,361	1,171	141,320	130,406	138,536	120,176
C'wealth	2,196	2,222	2,253	2,177	31,761	33,033	35,007	36,720	6,278,765	6,760,031	6,669,849	6,929,305

* Information not available. Totals exclusive.

(ii). *Bacon Factories.* Particulars of the factories engaged in this industry are as follows:—

BACON FACTORIES, 1906.

Items.	N.S.W.	Vic.	Qld.	S.A.	W.A.*	Tas.	C'wlth.
Number of factories	19	28	4	12	5	2	70
" persons employed	148	338	171	130	32	13	832
" males	147	333	†	126	32	13	660
" females	1	5	†	4	nil	nil	11
Actual horse-power of engines employed ...	164	196	84	155	51	41	691
Average No. of mths. in operation during yr.	10.84	10.50	†	†	7.56	12	...
Approximate value of land and buildings £	†	35,171	8,174	†	16,960	1,800	62,105
Approx. value of plant and machinery £	14,161	28,217	46,851	†	5,650	1,700	96,579
Total amount of salaries and wages paid £	14,582	25,606	†	†	2,746	890	43,824

* Particulars relating to two butter factories are included in figures fo Western Australia.
† Information not available. Totals of items exclusive of these States.

Comment upon the bacon-curing industry will be found in Section IX., "Farmyard and Dairy Production."

(iii.) *Butter, Butterine, Margarine, and Cheese Factories.* (*a*) Particulars of this industry for 1906 are given in the following table:—

BUTTER, ETC., FACTORIES, 1906.

Items.	N.S.W.	Vic.	Qld.	S.A.	W.A.*	Tas.	C'wlth
Number of factories	178	222	70	55	5	20	547
Number of employés	1,018	1,490	1,249	141	32	76	4,006
Number of males	1,010	1,455	†	137	32	70	2,704
Number of females	8	35	†	4	nil	6	53
Actual horse-power of engines employed ...	1,921	2,852	108	338	51	80	...
Average No. of months in operation during year	11,74	11.85	†	†	7.56	8.00	...
Approximate value of land and buildings £	†	242,467	72,903	†	16,960	12,257	344,587
Approximate value of plant and machinery £	218,596	307,935	194,257	†	5,650	13,351	649,789
Total amount of wages paid ... ... £	144,151	116,639	†	†	2,746	3,433	266,969

* The figures for Western Australia include particulars relative to bacon factories.
† Information not available. Totals of items exclusive of these States.

(b) The following table shews the progress of the factories in this industry from 1903 to 1906, and illustrates the recovery of the principal States from the effects of the drought.

DEVELOPMENT OF BUTTER, ETC., FACTORIES, 1903 TO 1906.

State.	Number of Factories.				Number of Persons Employed.				Approximate Value of Plant and Machinery.			
	1903.	1904.	1905.	1906.	1903.	1904.	1905.	1906.	1903.	1904.	1905.	1606.
									£	£	£	£
New South Wales	145	145	164	178	951	913	937	1,018	189,642	193,066	210,772	218,566
Victoria	207	214	215	222	1,319	1,400	1,381	1,490	312,265	301,423	306,559	307,635
Queensland ...	98	51	59	70	391	386	407	1,249	51,017	53,521	77,392	104,157
South Australia ...	50	50	53	55	155	155	158	141	§	§	§	§
Western Australia	1	1	2	2	*	8†	13†	32‡	*	1,150†	2,600†	5,650‡
Tasmania ...	15	17	26	20	119	102	123	76	13,917	10,722	13,686	13,351
Commonwealth	516	478	519	550	2,935	2,964	3,019	4,006	566,841	560,082	611,312	649,786

* The figures for Western Australia are included in biscuit factories. † Includes particulars of one bacon factory. ‡ Includes particulars of two bacon factories.
§ Information not available. Totals exclusive.

(iv.) *Meat and Fish-preserving, Ice and Refrigerating Works.* (a) The following table gives particulars of these works. It is to be noted that they include ice-making works, it being impossible to obtain separate particulars for all the States.

MEAT AND FISH-PRESERVING, ICE AND REFRIGERATING WORKS, 1906.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.*	Tas.	C'wlth.
Number of factories	58	54	28	3	9	4	156
Number of employés	1,434	622	954	40	...	19	3,069
Number of male employés	1,390	620	...	40	...	19	2,069
Number of female employés	44	2	...	...	...	...	46
Actual horse-power of engines employed...	2.723	2,066	2,146	151	...	20	7,106
Average number of months in operation during year	9.57	9.20	†	†	...	9	...
Approx. value of land and buildings £	†	222,325	240,215	†	...	16,600	379,140
Approx. value of plant and machinery £	403,369	116,256	229.231	†	...	30,120	778,976
Total amount of wages paid during year £	109,257	42,424	†	†	...	1,400	153,081

* Particulars included with other industries and not separable. † Information not available.
Total of items is exclusive of these States.

The chilling of various kinds of meats for export has long been an established industry in the several States. Full advantage has been taken by the States of the refrigerating machinery installed in steamships to build up a large export trade, and special terms have been made by the Commonwealth Government in its new English mail contract for the provision by the contractors of increased cold-storage facilities on their steamers. A system of Government inspection of meat exports exists in the States, and has resulted in the maintenance of a proper standard of commodity. In several of the States cool stores have been erected by Government in which meat is chilled prior to export. These stores are largely used by exporters, but sufficient particulars are not available to warrant publication.

(*b*) The following are the particulars of the export of chilled meats from Australia in 1906:—

EXPORT OF CHILLED MEAT, 1906.

Items.		N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wlth.
Beef	lbs.	3,679,418	1,242,388	36,639,446	...	...	...	41,561,252
„	£	40,285	14,954	378,676	...	...	...	434,455
Mutton and lamb ...	lbs.	50,972,771	27,405,451	3,683,991	8,614,360	15,812	...	90,692,385
„ ...	£	538,771	383,705	39,356	132,996	292	...	1,095,120
Pork	lbs.	1,923,747	300,106	1,248,371	...	...	...	3,472,224
„	£	32,480	5,059	23,397	...	...	...	60,936
Poultry	pairs	12,138	19,344	1,675	...	...	676	33,833
„	£	3,751	5,013	401	...	...	126	9,291
Rabbits and hares ...	pairs	5,938,518	4,622,307	220	242,006	...	245,150	11,048,201
„ ...	£	246,803	221,064	7	10,413	...	13,147	491,434

The largest quantity of beef was sent to the Philippines, the export being valued at £112,546; and Siberia, the export being valued at £98,082. The other principal places of destination were the United Kingdom, £15,896; Cape Colony, £63,185; Gibraltar, £12,204; Natal, £83,694; and Egypt, £22,027.

The largest quantity of mutton and lamb was sent to the United Kingdom, being valued at £839,360. Other customers were—Canada, £12,260; Cape Colony, £65,801; Natal, £142,031; and Egypt, £12,674.

The quantity of pork sent to the United Kingdom was valued at £29,206, that sent to Natal at £10,944, and that sent to the Philippines at £6980.

The value of poultry exported to Natal was £5708, and to Cape Colony, £1631.

Practically the whole of the chilled rabbits and hares exported went to the United Kingdom, the value thus exported being £486,094 out of a total of £491,434.

In addition to the above 3,073,193 lbs. of chilled meat, valued at £39,801, were exported as ships' stores.

(*c*) *Preserved Meats and Fish.* Meat preserving and canning is carried on in several of the States with success. The following table shews the quantity of meat thus treated:—

PRESERVED MEATS, 1906.

Items.	N.S.W.*	Vic.	Qld.	S.A.	W.A.	Tas.	C'wealth.
	qrs.	lbs.	lbs.				
Beef	39,818	673,232	10,293,794	No information	Nil	Nil	...
Mutton ...	†274,950	180,400	486,367				...
Rabbits ...	...	55,552	...				...

* Weights not available. † Number of sheep.

The preserving trade suffered, like others, at the drought period, but is also rapidly increasing. Potted and concentrated meats to the value of £20,756 were exported in 1906, about three-fifths from New South Wales and two-fifths from Queensland. The bulk of the export went to the United Kingdom. The value of exported tinned meats was £177,843; the quantity was 9,060,903 lbs. This was distributed amongst the States of export as follows:—New South Wales, 4,173,156 lbs., valued at £84,374; Victoria, 284,157 lbs., valued as £5769; Queensland, 3,607,086 lbs., valued at £74,391, and South Australia, 996,504 lbs., valued at £13,309. The principal countries of destination were:—The United Kingdom, which took 5,799,599 lbs., valued at £107,843; India, which took 542,540 lbs., valued at £13,271; New Guinea, which took 221,634 lbs., valued at £4711; and Germany, which took 385,518 lbs., valued at £7627. The balance was distributed in small quantities to a great many countries.

The imports of potted and preserved meats in 1906 were of the value of £53,592. Fish preserving has been from time to time attempted in several of the States, but has not become a permanent industry. There were not, in 1906, any fish-canning works in the Commonwealth, but owing to the offering of a bonus by the Commonwealth Government it may be expected that the industry will be established in the near future.

(v.) *Biscuits.* (*a*) The following table shews the position of biscuit-baking in the Commonwealth in 1906:—

BISCUIT MANUFACTORIES, 1906.

Items.	N.S.W.	Vic.	Q'ld.	S.A.	W.A.	Tas.*	C'wth.
Number of factories	5	4	7	2	2	5	25,
,, employés	1,095	1,067	183	106	95	113	2,659
,, male employés	593	709	...	72	69	95	1,518
,, female ,, ...	522	358	...	34	26	18	958
Actual horse-power of engines employed	241	119	51	36	25	64	536
Average number of months in operation during year	11.89	12.00	...	...	12.00	12.00	...
Approx. value of land and buildings £	...	47,530	14,250	...	4,950	10,650	77,380
,, ,, plant and machinery £	46,704	42,946	12,470	...	5,000	4,730	111,850
Total amount of wages paid during year £	42,237	52,534	...	...	7,612	6,381	108,764

* Includes confectionery. Figures for 1905 are given as the total amount paid for wages, figures for 1906 not being available, and the number of employés being the same as in 1905.

(*b*) The export trade in Australian-manufactured biscuits amounted in 1903 to 2,402,705 lbs., valued at £31,326. In 1906 the export amounted to 3,423,091 lbs., valued at £46,579, and was principally to Fiji and the South Seas. New South Wales exported 2,838,365 lbs., valued at £38,481, and Victoria 557,626 lbs. 1,798,863 lbs. of biscuits of Australian manufacture, valued at £51,576, were sent by the former State to other States, while the interstate export from Victoria of Australian production was 1,661,024 lbs., valued at £35,348.

(vi.) *Jam and Fruit Preserving, Pickles, Sauces, and Vinegar.* (*a*) The following are the particulars of this branch of industry for 1906 :—

JAM AND FRUIT PRESERVING, PICKLES, SAUCES, AND VINEGAR, 1906.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
Number of factories	20	26	8	23	4	9	90
,, employés	906	1,288	175	567	28	621	3,585
,, male employés	630	848	*	275	23	481	2,257
,, female ,, ...	276	440	*	292	5	140	1,153
Actual horse-power of engines employed...	138	281	67	108	73	273	940
Average number of months in operation during year	11.57	11.30	*	*	9.64	5.00	...
Approx. value of land and buildings £	*	88,882	5,600	*	4,189	25,150	123,821
,, ,, of plant and machinery £	22,163	39,541	6,630	*	743	14,000	83,077
Total amount of wages paid during year £	38,686	63,702	*	*	2,617	24,258	129,262

* Information not available. Total of these items is exclusive of these States.

(*b*) The jam and fruit-preserving industry has grown with the rise of orcharding and small-fruit growing, and is now an industry of importance. As a wholesale exporting industry it is comparatively young, but of fast growing value.

PARTICULARS OF PRODUCTION FOR 1906.

State.	Jams and Jellies.		Fruit Preserved.		Fruit Pulped.	
	Weight.	Value.	Weight.	Value.	Weight.	Value.
	cwt.	£	cwt.	£	cwt.	£
New South Wales	†	343,268*	†	†	†	†
Victoria	203,038	†	43,138	†	56,619	†
Queensland	21,130	30,719	†	†	†	†
South Australia	†	†	†	†	†	†
Western Australia	†	†	†	†	†	†
Tasmania	96,843	157,178	†	†	†	†

* Includes pickles and sauces. † Not available.

(*c*) The export and interstate transfer of jams and jellies of Australian manufacture, and of preserved and pulped fruits in 1906 are shewn in the following tables:—

EXPORT OF JAMS AND JELLIES AND PRESERVED AND PULPED FRUIT. 1906.

State.	Jams and Jellies.		Preserved Fruits.		Pulped Fruits.	
	Quantity.	Value.	Dozen Tins or Bottles.	Value.	Quantity.	Value.
	lbs.	£		£	gals.	£
New South Wales	533,407	7,670	4,920	1,474	319,468	4,073
Victoria ...	582,316	9,121	23,968	8,611	44,922	208
Queensland ...	24,273	303	882	322	...	...
South Australia ...	2,157	37	1,039	470	...	...
Western Australia	...	...	...	...	...	...
Tasmania ...	432,550	6,740	2,231	1,884	197,374	1,687
Commonwealth	1,574,703	23,871	33,044	12,771	561,764	5,968

(*d*) INTERSTATE TRANSFER OF THE SAME COMMODITIES IN 1906.

State.	Jams and Jellies.		Preserved Fruits.		Preserved Fruits.		Pulped Fruits.	
	Quantity.	Value.	Doz. Tins or Bottles.	Value.	Quantity.	Value.	Quantity.	Value.
	lbs.	£		£	gals.	£	lbs.	£
N.S.W.	4,417,628	57,724	18,549	5,741	4,379	287	138,521	561
Victoria	5,978,960	79,435	121,846	35,011	23,997	3,424	223,032	1,876
Q'land...	326,106	5,207	124,135	21,420	9,029	1,206	37,652	225
S. Aust.	1,789,389	22,237	61,621	16,441	3,410	484	87,815	476
W. Aust.	2,518	36	362	93	9,667	1,381	...	...
Tas. ...	5,819,886	78,142	51,760	15,133	154,163	22,023	1,107,948	8,941
C'w'lth	18,334,487	242,781	378,273	93,839	204,645	28,805	1,594,968	12,079

(vii.) *Confectionery.* (*a*) The following table shews the position of the confectionery industry in 1906, and it will be seen how it has expanded in ten years when it is stated that in 1896 there were in New South Wales 17 establishments, with 475 employés; and in Victoria 13 establishments, employing 512 persons and using plant and machinery valued at £16,570:—

CONFECTIONERY, 1906.

Items.	N.S.W.	Vic.*	Q'land.	S.A.	W.A.	Tas.	C'wlth.
Number of factories	27	23	11	9	6	Included in Biscuits.	76
" employés	1,003	1,095	264	184	132		2,678
" male employés	615	...	...	143	61		819
" female "	388	...	...	41	71		500
Actual horse-power of engines employed ...	223	...	56	92	45		416
Average number of months in operation during year	11.89	11.80	†	†	12.00		...
Approx value of land and buildings £	†	47,938	16,069	†	17,340		81,347
Approx. value of plant and machinery £	46,875	34,272	12,773	†	10,998		104,918
Total amount of wages paid during year £	52,503	...	†	†	12,787		65,290

* In the "Victorian Statistical Register" for 1906 sugar refineries are combined with confectioneries. In the "Victorian Year Book" for 1906 certain particulars of sugar refineries are given, and the above figures are such as are separable from the total of confectioneries and sugar refineries.

† Information not available.

(*b*) The export and interstate transfers of Australian produce for 1906 are as shewn in the next table, viz.:—

CONFECTIONERY, 1906.

State.	Export.		Interstate Transfers.	
	Quantity.	Value.	Quantity.	Value.
	lbs.	£	lbs.	£
New South Wales	91,441	2,239	692,411	17,450
Victoria	277,464	11,560	4,944,121	150,024
Queensland	2,157	70	56,532	1,620
South Australia	...	...	224,968	6,195
Western Australia	54	2	15,942	403
Tasmania	...	...	4,037	95
Commonwealth	371,116	13,871	5,938,011	175,787

Imports of confectionery for 1906 amounted to 3,184,134 lbs., valued at £116,305.

(viii.) *Flour Mills.* (*a*) The following table describes the position of the flour-milling industry in the year 1906:—

FLOUR MILLS, 1906.

Items.	N.S.W.	Vic.	Q'ld.	S.A.	W.A.	Tas.	C'wth.*
Number of factories	78	64	17	62	18	16	255
" employés	873	788	187	537	157	130	2,672
" male employés	869	784	...	537	156	128	2,474
" female "	4	4	...	...	1	2	11
Actual horse-power of engines employed ...	3,813	3,356	477	2,710	649	521	11,526
Average number of months in operation during year	10.44	10.1	...	...	9.80	9	...
Approx. value of land and buildings £	...	222,862	53,619	...	56,826	36,725	370,032
" " plant and machinery £	297,859	243,149	61,760	...	44,494	34,035	681,297
Total amount of wages paid during year ...	84,178	80,261	...	...	18,641	12,200	195,280

* Totals are only of those States supplying information.

(*b*) The production of flour by the mills in each State of the Commonwealth in the years 1903 to 1906 was as follows:—

FLOUR MILLS—PRODUCTION 1903 TO 1906.*

Year.	N.S.W.	Victoria.	Q'nsland.	Sth. Aust.	West. Aust.	Tasmania.	C'wealth.†
	Tons.	Tons.	Tons.		Tons.	Tons.	Tons.
1903	121,074	115,368	23,839	No information available.	13,711	20,656	294,648
1904	210,137	202,314	34,211		20,185	19,822	486,669
1905	205,805	209,058	37,505		26,420	18,325	497,113
1906	225,995	219,166	24,219		26,977	17,692	514,049

* Tons of 2000 lbs. † Total for five States only.

(*c*) The oversea export of flour from Australia during the years 1903 to 1906 appears in the following table:—

FLOUR, QUANTITY AND VALUE OF EXPORT, 1903 TO 1906.
(IN TONS OF 2000 LBS.)

Items.	1903.	1904.	1905.	1906.
Quantity ... Tons	6,097	103,144	154,269	166,875
Value ... £	61,199	792,772	1,160,813	1,216,806

It is to be noted that an increasing quantity of flour is exported in lieu of the grain itself. Comment on the export of flour and wheat will be found in Section viii., "Agriculture." Other grain products are exported in but small quantities. The country which received the largest quantity in 1906 was the United Kingdom. Other large importers of Australian flour were Cape Colony, Hong Kong, Mauritius, Natal, Straits Settlements, Java, the Philippine Islands, and Portuguese East Africa.

(ix.) *Sugar Mills.* (*a*) The following table shews the position of the cane-crushing branch of the sugar-making industry in 1906. This industry is carried on in Queensland and New South Wales, the only States of the Commonwealth in which the sugar-cane is grown. Reference to the other States is therefore omitted from the table:—

SUGAR MILLS, 1906.

Items.	N.S.W.	Queensland.	Total.
Number of factories	5	55	60
Number of employés	622	2,876	3,498
Number of male employés	622	*	622
Number of female ,, ...	...	*	...
Actual horse-power of engines employed ...	3,110	9,386	12,496
Average No. of months in operation during year	4.74	*	...
Approximate value of land and buildings £	*	206,092	206,092
Approximate value of plant and machinery £	507,353	1,668,460	2,175,813
Total amount of wages paid during year £	47,522	*	47,522

* Information not available. Totals are exclusive.

(*b*) The first crushing of sugar for commercial use is said to have taken place in New South Wales about 1850 on the plantation of Mr. Thomas Scott; the planting-out of cane was not, however, taken up by settlers, notwithstanding Mr. Scott's earnest advocacy of the industry, until 1862, when a small growth resulted in the establishment of a mill in Queensland; the appliances were rude, but the result satisfactory. In April, 1864, a mill with a modern crushing and boiling plant was opened at Cleveland (Q.) by Hon. Lionel Hope, but his success was only partial, and he closed down his works till 1867. In 1866 the Pampania Company opened a small factory in Queensland, and in 1867 another small but satisfactory plant and a large and very fine mill started work.

Two factories were erected in the Maryborough district, and in 1868 others were working in the Mackay, Bowen and other districts. The industry was by the end of 1870 firmly established.

The method of work to be adopted was matter of controversy in the early days of sugar-milling. The large grower who could afford to erect a modern mill was able to work at a profit; the small grower often preferred the loss and waste consequent upon the use of a small and incomplete mill to the cost of carriage to a large central mill and the allowance of a half share of the produce demanded by the owner of a large central mill in payment for crushing and boiling. The necessity of the case and Government assistance have brought into being a number of central mills to which the cane is sent.[1]

The Sugar Works Guarantee Act of 1893 empowered the Queensland Government to guarantee the issue of debentures by companies intending to embark in this industry to raise money for the erection of mills and purchasing plant; and an amending Act of 1895 empowered the Government to take up such debentures, but provided that the total amount so expended should not exceed £500,000, and that when that amount was reached the power of guarantee should also cease. Thirteen mills and one tramway company have received advances, which now amount to £514,987. There have been some special temporary advances, which are outside the Acts. The indebtedness of the borrowers was reduced in 1906 by £34,164.

An unfortunate feature of the industry is that large quantities of molasses have been and still are allowed to run to waste. Part of the molasses produced is used in distillation, part is turned into food cake for cattle, and part is used for manuring land, but the greatest part produced is put to no use whatever.

(*c*) The product of the sugar mill is raw sugar and molasses, the former being sent to the refineries in different parts of Australia for further treatment. The following tables shew the progress of this industry from the dates at which information is first obtainable :—

SUGAR MILLS, NEW SOUTH WALES, 1870 TO 1906.

Items.		1870.	1877.	1886.	1891.	1896.	1901.	1906.
Number of factories		27	50	64	33	23	12	5
,, employés		...	1,065	2,259	1,621	1,475	695	622
Sugar produced	Tons	677	7,537	13,750	16,033	28,557	19,519	23,999
Molasses produced	gals.	...	345,543	507,000	1,074,080	2,520,580	1,300,909	1,305,466

The reduction in the number of New South Wales sugar mills is due chiefly to a tendency, noticeable also in many other branches of industry, to concentrate the cane-crushing in mills fitted with modern machinery, and the consequent closing of the small home mill. On the north coast of New South Wales some land formerly devoted to sugar-growing has been turned into pastures in connection with the dairying industry.

(*d*) SUGAR MILLS, QUEENSLAND, 1868 TO 1906.

Items.		1868.	1876.	1886.	1891.	1896.	1901.	1906.
Number of factories		10	70	118	68	63	52	52
,, employés		...	...	...	...	3,796	...	2,876
,, acres crushed		...	7,245	40,756	36,821	66,640	78,160	98,194
Sugar produced	Tons	...	8,214	59,225	51,219	100,774	120,858	184,377
Molasses produced	gals.	68,622	416,415	1,784,266	1,640,662[1]	2,195,470	3,679,952	8,373,518

1. 1890.

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[1] See "The Sugar Cane in Australia," J. H. Hinchcliffe (1868); also "Sugar-Growing in Queensland," edited by Angus Mackay (1870). Reprinted from the "Queenslander," of 1869.

(*e*) Notwithstanding the increase in the output of sugar in Australia the production is still insufficient to supply the needs of the Commonwealth. There has been a great fluctuation in imports, the totals from 1903 to 1906 being as follows:—

IMPORTS OF SUGAR, 1903 TO 1906.

Year.	Quantity.	Value.	Average Value per Cwt.
	cwt.	£	s.
1903	1,830,595	1,054,338	11.52
1904	760,702	415,120	10.91
1905	498,670	276,157	11.08
1906	839,519	439,916	10.48

In 1906 practically all the imports came from Java, £359,838; Mauritius, £65,580; Fiji, £10,693; and China, £3626.

The fluctuation in value probably accounts for an increased import of raw sugar by the refineries, though a number of other matters, such as an increased tariff and the bounties offered to growers, affect the trade.

The export of Australian-made sugar amounted only to £7884 in 1906. The interstate transfer of raw sugar is not distinguished from refined sugar, and no statement of the relative proportion of raw and refined sugar produced in Queensland is furnished by that State.

(x.) *Sugar Refineries.* (*a*) The following table gives particulars of this industry in 1906:—

SUGAR REFINERIES, 1906.

Items.	N.S.W.	Vic.†	Q'land.	S.A.	W.A.	Tas.	C'wlth.
Number of factories	1	2	2	1	nil	nil	6
" employés	454	409	345	103			1,311
" male employés	454	409	*	103			966
" female "	nil	nil	*	nil			...
Actual horse-power of engines employed ...	1,220	776	780	1,600			4,376
Average number of months in operation during year	12.00	12.00	*	*			...
Approx. value of land and buildings £	*	93,400	95,000	*			188,400
Approx. value of plant and machinery £	388,247	88,550	212,844	*			689,641
Total amount of wages paid during year £	51,143	*	*	*			51,143

* Information not available. Totals exclusive of these States. † Also included in "Confectionery." See *ante*, p. 465.

(*b*) The sugar-refining industry is distinct from the sugar-milling industry. The latter provides the raw material which the former turns into a marketable commodity. The former can be carried on in any place, the latter must be near the canefields. The establishment of the industry at present under consideration considerably antedates the establishment of the sugar-milling industry, the raw material upon which it operated being chiefly brought from Mauritius and the East. As has already been shewn, a quantity of raw sugar is still imported for treatment in Australian refineries.

In 1906 1,433,491 cwt. of cane sugar was imported into Victoria, of which 960,971 cwt. were from Queensland and 410,861 cwt. were from Java; of this 1,317,172 cwt. were treated, producing 1,238,010 cwt. of refined sugar and 47,109 cwt. of treacle. The balance of raw sugar imported into Victoria was used in brewing and other trades.

In 1906 the New South Wales sugar refinery produced 1,406,000 cwt. of refined sugar, valued at £951,032.

(xi.) *Breweries.* (*a*) The following are the particulars of the brewing industry in Australia for 1906:—

BREWERIES AND THEIR PRODUCTION, 1906.

Items.	N.S.W.	Victoria.	Q'sland.	S. Aust.	W. Aust.	Tas.	C'wlth.
BREWERIES.							
Number of factories ...	39	39	14	20	29	7	148
„ employés ...	881	1,030	392	297	540	132	3,272
„ male employés	880	1,028	*	297	540	132	2,877
„ female „	1	2	*	nil	nil	nil	3
Actual horse-power of engines employed ...	727	1,012	253	265	694	78	3,029
Average No. of months in operation during year	11.95	11.70	*	*	11.18	12.00	...
Approx. value of land and buildings ... £	*	487,967	102,085	*	181,288	86,518	857,708
Approx. value of plant and machinery ... £	240,786	235,980	70,137	*	107,453	17,084	671,440
Total amount of wages paid during year £	100,150	126,352	*	*	79,273	17,107	323,882

* Information not available. Total of these items exclusive of these States.

MATERIALS USED AND PRODUCTION.

Sugar ... ... cwt.	68,110	101,692	...	No information.	31,384	...	...
Malt ... ... bush.	488,982	533,531	149,398		177,072	...	...
Hops ... ... lbs.	586,438	623,249	...		277,805	...	...
Beer and stout made gals.	14,082,390	16,409,465	4,608,598		5,099,616	1,870,066	...
Value ... ... £	790,606	...	299,894		...	109,187	...

(*b*) Established at an early date in Australia, the main feature of the history of the trade has been the change from the small local brewery in every township of moderate size to the large centralised city brewery. A recent amalgamation in Melbourne has resulted in the closing of several large breweries, and production in that city will be concentrated in three establishments under one management. A workman's co-operative brewery has been opened in Sydney and a co-operative brewery has been opened in Melbourne by a number of "free" hotelkeepers.

The details of production in 1906 are as shewn in the preceding table.

(*c*) The export of Australian-brewed beer is very small, amounting in 1906 to only 5894 gallons, valued £886, in bottle, and 2762 gallons, valued at £228, otherwise; 23,315 gallons, valued at £1868, were exported as ships' stores. Interstate transfer was not great, amounting only to 154,625 gallons bottled ale, valued at £20,425; 14,861 gallons porter, valued at £2002; and 885,373 gallons ale in bulk, valued at £48,152. Victoria and Tasmania were the largest interstate exporters, sending out beer in bulk valued at £26,503 and £14,661 respectively.

(xii.) *Distilleries.* (*a*) The following are the particulars of this industry in the Commonwealth for the year 1906:—

DISTILLERIES AND THEIR PRODUCTION, 1906.

Items.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	C'wlth.
DISTILLERIES.							
Number of factories	2	9	3	13	Nil	Nil	27
„ employés	17	81	19	62			179
„ male employés	17	81	*	62			160
„ female „	Nil	Nil	*	Nil			...
Actual horse-power of engines employed ...	64	179	19	146			408
Average time in operation during yr. mths.	12.00	6.20	*	*			...
Approximate value of land and buildings £	*	81,928	3,100	*			85,028
Approx. value of plant and machinery £	32,531	62,871	8,480	*			103,882
Total amount of wages paid during year £	2,310	2,188	*	*			4,498

* Information not obtainable. Total of items exclusive of these States.

DISTILLERIES AND THEIR PRODUCTION—CONTINUED.

(*b*) PRODUCTION.

Items.	N.S.W.	Vic.	Q.	S.A.	W.A.	Tas.	C'wlth.
Spirits (in Proof Gallons).							
Brandy (from wine)	12,446	4,485	...	Not obtainable	Nil	Nil	16,931
Whisky	...	6,521	...				18,967
Gin	...	784	...				784
Rum	...	14,600	331,768				346,368
Rectified spirits	634,170	65,033	...				699,203
Methylated spirits...	...	2,955	...				2,955

(*c*) The following table shews the value of the imports and exports of spirits in the years 1903 to 1906 :—

Spirits.	1903.		1904.		1905.		1906.	
	Imports.	Exports.	Imports.	Exports.	Imports.	Exports.	Imports.	Exports.
	£	£	£	£	£	£	£	£
Brandy (bottled)	89,958	3.568	86,323	4,457	86,616	2,862	94,767	4,346
„ (bulk)	48,305	7,306	43,342	2.145	45,493	5.594	48,795	2,409
Gin (British)	12,739	39	16,117	...	18,030	...	17,589	...
„ (Holland and Geneva) ...	28,864	...	24,868	...	27,388	...	29,006	...
„ (Schnapps)	39,484	...	67,715	...	75,161	...	71,157	...
Rum (bottled)	3,688	16	2,511	...	2,813	6	2,427	21
„ (bulk)	17,805	121	17,136	161	22,486	2,592	25,939	2,224
Whisky (bottled)	152,466	94	122,772	31	146,895	...	119.416	5
„ (bulk)	291,657	...	300,005	154	366,618	...	370,543	...
Bitters	2,493	...	2,601	...	3,165	...	4,374	...
Cordials and liqueurs	9,267	13	10,848	22	12,524	94	15,223	66
Methylated	36	114	43	56	49	105	13	27
Perfumed and Bay rum	32,750	40	35,468	5	30,872	36	36,505	25
Essences and tinctures	33,282	149	34,451	529	41,374	210	48,463	167
Sarsaparilla	7,753	10	7,623	18	8,041	24	5,504	...
N.E.I.	13,431	3,628	13,611	4,856	6,386	5,516	6,676	5,789

(xiii.) *Tobacco, Cigars, and Cigarettes.* (*a*) The following are the particulars of manufactories engaged in this industry in Australia in 1906 :—

TOBACCO, CIGAR, AND CIGARETTE FACTORIES, 1906.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
Number of factories	13	12	2	2	3	Nil	32
„ employés	1,016	1,846	63	135	30		3,090
„ male employés	626	803	*	98	16		1,543
„ female „	390	1.043	*	37	14		1,484
Actual horse-power of engines employed ...	314	256	12	44	...		626
Average number of months in operation during year	11.89	10.8	*	*	12.00		...
Approx. value of land and buildings £	*	150,668	1,660	*	2,663		154,991
„ „ plant and machinery £	104,051	78,522	4,684	*	235		187,492
Total amount of wages paid during year £	73,314	111,169	*	*	1,835		186,318

* Information not available. Totals of items exclusive of these States.

(*b*) This industry was early established in Australia, and comparison of the following figures with those above given will shew its progress during recent years. In 1896 there were in New South Wales eight establishments employing 641 persons, of whom 471 were males and 170 females. The plant and machinery employed were valued at £55,700. In Victoria, in this same year, there were twelve establishments employing 650 persons, of whom 424 were males and 226 were females. The value of the plant and machinery employed was £42,410. The Australian market is now largely supplied with local manufactures.

DEVELOPMENT OF TOBACCO, CIGAR AND CIGARETTE FACTORIES, 1903 TO 1906.

State.	Number of Factories.				Number of Persons Employed.				Approx. Value of Plant and Machinery.			
	1903.	1904.	1905.	1906.	1903.	1904.	1905.	1906.	1903.	1904.	1905.	1906.
									£	£	£	£
N.S. Wales ...	10	7	13	13	1,011	977	952	1,016	92,355	105,308	104,466	104,051
Victoria	12	9	10	12	1,268	1,324	1,638	1,846	62,026	82,386	72,772	78,522
Queensland ...	5	3	1	2	114	110	61	63	11,101	12,583	4,000	4,684
South Australia...	(3)	3	3	2	(248)	248	171	135	...	...	...	...
West Australia ...	4	2	2	3	106	18	16	30	4,846	70	80	235
Tasmania ...	nil	nil	nil	nil	nil	nil	nil	nil	nil	nil	nil	nil
Commonwealth	34	24	29	32	2,659	2,677	2,838	3,090	170,328	200,347	181,318	187,492

(*c*) The quantity and sources of the raw material used in the tobacco industry, and the products of the industry may be set out as follows:—

DEVELOPMENT OF TOBACCO INDUSTRY, 1903 TO 1906.

State.	1903.	1904.	1905.	1906.	1903.	1904	1905.	1906.
	Leaf, Imported, Used.				Leaf, Australian Grown, Used.			
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
New South Wales ...	2,714,578	2,709,569	2,606,702	3,056,906	1,009,745	1,256,339	1,145,923	1,178,183
Victoria	2,052,100	2,768,873	3,597,887	4,172,065	304,049	256,053	265,219	431,941
Queensland	*	*	*	*	*	*	*	*
South Australia ...	*	*	*	*	*	*	*	*
Western Australia ...	75,851	10,880	19,159	23,322	nil	nil	nil	nil
Tasmania	nil	nil	nil	nil	nil	nil	nil	nil
Commonwealth ...	4,842,529	5,489,312	6,223,748	7,252,293	1,313,794	1,512,392	1,411,142	1,610,124
	Tobacco Made.				Snuff Made.			
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
New South Wales ...	3,329,938	3,404,201	3,318,719	4,057,965	...	...	...	...
Victoria	2,390,976	3,166,767	3,981,357	4,650,113	813	1,122	1,051	516
Queensland	*	*	*	*	*	*	*	*
South Australia ...	*	*	*	*	*	*	*	*
Western Australia ...	61,404	...	...	1,280	...	...	...	...
Tasmania	nil	nil	nil	nil	nil	nil	nil	nil
Commonwealth ...	5,782,318	6,570,968	7,300,076	8,709,358	813	1,122	1,051	516
	Cigars Made.				Cigarettes Made.			
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
New South Wales ...	45,297	47,756	48,850	50,326	790,697	829,851	818,400	837,835
Victoria	116,699	153,610	167,502	207,505	134,400	170,940	237,901	309,489
Queensland	*	*	*	*	*	*	*	*
South Australia ...	*	*	*	*	*	*	*	*
Western Australia ...	11,672	8,756	7,629	8,090	479	...	...	284
Tasmania	nil	nil	nil	nil	nil	nil	nil	nil
Commonwealth ...	173,668	210,122	223,981	265,921	925,576	1,000,791	1,056,301	1,147,508

* No information available.

(*d*) Figures relating to the Australian trade in tobacco appear in the following tables:—

TOBACCO IMPORTS AND EXPORTS, 1903 TO 1906.

Class.	Quantity.				Value.			
	1903.	1904.	1905.	1906.	1903.	1904.	1905.	1906
	lbs.	lbs.	lbs.	lbs.	£	£	£	£
Tobacco, manufactured ...	2,508,342	2,175,897	2,045,394	1,926,002	188,327	154,882	157,379	145,760
" unmanufactured	5,156,793	6,629,793	5,371,534	7,538,329	232,884	235,187	208,111	285,106
Cigars	305,705	251,189	280,614	346,937	106,623	96,976	108,730	133,209
Cigarettes	131,816	168,993	202,778	160,811	41,828	54,089	64,384	55,549
Snuff	6,901	6,105	9,152	6,976	1,114	1,048	1,529	1,188

(*e*) EXPORTS OF TOBACCO OF AUSTRALIAN MANUFACTURE.

Class.	Quantity.				Value.			
	lbs.	lbs.	lbs.	lbs.	£	£	£	£
Tobacco, manufactured ...	139,150	312,519	469,810	475,117	10,597	26,019	39,270	39,806
Cigars	194	20	73	254	72	6	41	170
Cigarettes	1,768	1,931	1,873	1,209	458	549	600	349

Practically the whole of the Australian export is sent to New Zealand.

(*f*) While there has been a slight but steady decrease in the imports of manufactured tobacco the importation of leaf tobacco has increased by 50 per cent. during four years, while there is in addition a satisfactory increase shewn in the use of locally-grown leaf. There was also an increase both in the local manufacture and in the importation of cigars and cigarettes. The figures taken as a whole shew the increased consuming power of the community as well as the prosperous state of the tobacco-manufacturing industry in the Commonwealth.

8. **Industries of Class VII.**—(i.) *General.* This class comprises the following industries, most of them of great importance, viz.:—Woollen and tweed mills, boots and shoes, slop clothing, clothing (tailoring), dressmaking and millinery, dyeworks and cleaning, furriers, hats and caps, waterproof and oilskin, shirts, ties, and scarves, rope and cordage, tents and tarpaulins.

Particulars of the state of the textile industries in the year 1906 are shewn in the table hereunder:—

FACTORS OF PRODUCTION, INDUSTRIES OF CLASS VII., CLOTHING AND TEXTILE FABRICS, 1906.

Items.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	C'wealth.
Number of factories	724	1,173	103	131	127	77	2,335
Percentage on State total	18.75	26.89	7.90	12.87	19.10	20.26	...
Percentage on class total	31.00	50.14	4.41	5.61	5.44	3.30	...
Number of employés	19,650	30,881	4,318	4,048	2,078	1,619	62,594
Percentage on State total	25.25	36.23	18.02	19.93	16.11	19.05	...
Percentage on class total	31.39	49.34	6.90	6 47	3.32	2.58	...
Approx. value of land and buildings £	*947,332	1,249,424	168,479	†	169,345	69,950	2,604,530
Approx. val. of plant and machinery £	286,040	529,237	223,651	†	20,297	50,911	1,110,136
Percentage on State total	3.45	8.20	5.22	....	1.09	5.99	...
Total amount of salaries and wages £	907,542	1,278,886	†	†	143,736	55,443	2,385,607
Percentage on State total	16.22	23.39	...	...	9.39	8.91	...

* (1901). † Information not available. Totals of these items are exclusive of these States.

The total number of factories in this class in 1906 was 20.16 per cent. of the total in the Commonwealth, and the average number of persons engaged in this class of industry in 1906 was 27.37 per cent. of the total in the Commonwealth.

(ii.) *Woollen and Tweed Mills.* (*a*) The following table describes the woollen and tweed mills of the several States in the Commonwealth in the year 1906 :—

WOOLLEN AND TWEED MILLS, 1906.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
Number of factories	5	9	1	2		4	21
„ employés	338	1,434	117	155		274	2,318
„ male employés	160	724	*	60		89	1,033
„ female „	178	710	*	95		185	1,168
Actual horse-power of engines employed ...	272	2,137	50	106	nil	71	2,636
Average number of months in operation during year	11.20	12.00	*	*		12	...
Approx. value of land and buildings £	*	104,335	11,500	*		15,500	131,335
„ „ plant and machinery £	36,400	236,988	24,500	*		42,200	340,088
Total amount of wages paid during year £	14,231	76,901	*	*		11,326	102,458

* Information not available. Totals of these items are exclusive of these States.

From the above table it will be seen that the manufacture of woollens and tweeds is now well established in Australia. It is also to be noted that this is one of the few trades in which the island State of Tasmania is prominent. The trade was established in Australia at an early period of its manufacturing history, the first record in Victoria dating back to 1867.

(*b*) The progress in recent years of this industry in each State of the Commonwealth where mills exist is shewn in the following tables. This industry is one in which machinery must be employed under modern conditions, and therefore the information obtainable for each State is practically comparable, upon the basis already stated, for a longer period than is the case with many other manufactures, and figures are therefore given for the years 1901 to 1906 :—

DEVELOPMENT OF WOOLLEN MILLS IN AUSTRALIA, 1901 TO 1906.

Year.	N.S.W.		Victoria.		Queensland.		S. Aust.		Tasmania.		C'wealth.	
NUMBER OF MILLS AND PERSONS EMPLOYED.												
1901	4	234	9	1,075	...	...	2	110	3	200	18	1,619
1902	4	276	10	1,022	1	129	2	142	3	210	20	1,779
1903	4	280	9	1,136	1	87	2	141	3	201	19	1,845
1904	3	245	10	1,231	1	122	2	142	3	223	19	1,963
1905	3	262	11	1,315	1	112	2	130	4	236	21	2,055
1906	5	338	9	1,434	1	117	2	155	4	274	21	2,318

APPROXIMATE VALUE OF PLANT AND MACHINERY.

Year.	N.S.W.	Victoria.	Queensland.	South Aust.	Tasmania.	C'wealth.
	£	£	£		£	£
1901	16,100	197,930	...	*	...	214,030
1902	29,500	203,200	27,240	*	28,000	287,940
1903	33,450	204,036	23,174	*	28,000	288,660
1904	31,439	212,286	24,503	*	29,600	297,828
1905	31,540	234,532	23,231	*	29,940	319,243
1906	36,400	236,988	24,500	*	42,200	340,088

* Not available.

Western Australia, which possesses no woollen mills, is omitted from the table.

(*c*) The following are the particulars of the production of woollen and tweed mills in New South Wales and Victoria in the years 1901 to 1906. No information is available for the other States :—

PRODUCTION OF WOOLLEN AND TWEED MILLS, 1901 TO 1906.

Year.	Tweed and Cloth.			Flannel.			Blankets, Shawls, and Rugs.		
	N.S.W.	Victoria.	Total.	N.S.W.	Victoria.	Total.	N.S.W.	Victoria.	Total.
	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	No.	No.	No.
1901 ...	525,020	818,975	1,343,995	3,428	2,229,617	2,233,045	10,900	103,204	114,104
1902 ...	566,296	708,749	1,275,045	14,500	2,612,343	2,626,843	13,480	140,936	154,416
1903 ...	458,302	662,381	1,120,683	17,208	3,201,275	3,218,483	14,580	167,232	181,812
1904 ...	481,289	697,726	1,179,015	1,700	3,301,004	3,301,704	16,582	180,937	197,519
1905 ...	459,590	738,924	1,198,514	4,549	3,355,013	3,359,562	16,367	298,728	315,095
1906 ...	498,164	840,649	1,338,813	7,286	3,637,846	3,645,132	20,332	301,639	321,971

The production of all the States consists chiefly of tweed cloths, flannels and blankets, which have acquired a high reputation for purity and durability.

No cotton spinning or weaving or linen weaving is carried on in Australia. Cotton ginning has been carried on at periods far apart in the northern States, and a mill was lately reopened at Ipswich in Queensland.

It is noteworthy that the value of the imports of blankets into Australia has fallen from £114,508 in 1902 to £53,506 in 1906. The imports of apparel and textiles generally have increased in value from £9,354,417 in 1902 to £10,584,213 in 1906; this affords a measure of the community's needs in this direction.

(iii.) *Boots and Shoes.* (*a*) Boots and shoes and all kinds of foot-wear are now manufactured in considerable quantities in Australia, chiefly in New South Wales and Victoria. The particulars of the boot factories of the several States for the year 1906 are as follows:—

BOOT AND SHOE FACTORIES, 1906.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wlth
Number of factories	102	134	29	17	12	15	309
" " employing power ...	58	77	11	12	5	8	171
" employés	4,767	5,703	1,015	1,212	236	323	13,256
" male employés	3,178	3,798	*	761	181	258	8,176
" female "	1,599	1,905	*	451	55	65	4,065
Actual horse-power of engines employed ...	670	543	74	153	24	38	1,503
Average number of months in operation during year	11.87	11.10	*	*	11.49	12.00	...
Approx. value of land and buildings £	*	154,394	33,095	*	16,240	8,600	212,329
" " plant and machinery £	122,580	99,042	20,592	*	6,626	6,713	255,553
Total amount of wages paid during year £	274,732	332,538	*	*	20,554	20,311	648,135

* Information not available. Totals of these items are exclusive of these States.

Among the specialised secondary industries of Australia the boot and shoe industry stands pre-eminent in respect of the size and equipment of the factories engaged in it, the employment afforded by it, and the range and excellence of its output.

(*b*) The progress of the industry in the last four years is shewn in the following table:—

DEVELOPMENT OF BOOT AND SHOE FACTORIES, 1903 TO 1906.

State.	No. of Factories.				No. of Persons Employed.				Approximate Value of Plant and Machinery.			
	1903.	1904.	1905.	1906.	1903.	1904.	1905.	1906.	1903.	1904.	1905.	1906.
									£	£	£	£
N.S.W. ...	93	92	98	102	4,288	4,317	4,465	4,767	100,980	105,931	122,429	122,580
Victoria ...	136	131	136	134	5,211	5,628	5,873	5,703	82,594	94,334	98,136	99,042
Q'land. ...	53	43	39	29	1,145	1,038	1,047	1,015	21,919	19,920	17,726	20,592
S. Aust. ...	(23)	23	19	17	(1,292)	1,292	1,270	1,212	*	*	*	*
W. Aust. ...	16	18	14	12	290	304	257	236	8,901	8,729	9,200	6,626
Tasmania	13	13	15	15	344	333	332	323	5,928	6,040	6,915	6,712
C'wealth	334	320	321	309	12,570	12,912	13,244	13,256	220,322	234,954	254,406	255,553

* Information not available.

(*c*) The output (pairs) of boots and shoes and slippers produced in each State of the Commonwealth during the years 1903-1906, so far as the information is available, is as follows:—

PRODUCTION OF BOOT FACTORIES, 1903 TO 1906.

State.	Boots and Shoes.				Slippers.			
	1903.	1904.	1905.	1906.	1903.	1904.	1905.	1906.
	Pairs.	Pairs.	Pairs.	Pairs.	Pairs.	Pairs.	Pairs.	Pairs.
N S.W.... ...	3,166,475	3,291,087	3,250,243	3,567,555	397,531	477,302	435,912	378,599
Victoria ...	3,574,761	4,065,881	3,951,033	4,001,580	150,012	189,108	165,892	175,575
Queensland ...	682,762	707,680	595,784	710,089	*	*	*	34,293
South Australia†	...	...	...	...	...	...	...	...
West. Australia	221,775	223,692	186,703	198,968	...	...	...	...
Tasmania ...	202,249	188,845	142,078	171,795	...	...	...	...
C'wealth ...	7,848,022	8,477,185	8,125,841	8,649,987	547,543	666,410	601,404	588,467

* Included in boots and shoes. † No information available.

Statistics for a series of years of the value of the production of boots and shoes are unobtainable in the case of most of the States. In 1906 the value of the production of New South Wales was £981,997; of Queensland, £203,837; and of Tasmania, £53,880.

(*d*) Attention has already been called to the falling-off in the importation of boots into Australia under the section describing the leather trades. Imports decreased from £219,065 in 1903 to £177,558 in 1906. This fact, taken in conjunction with the statistics of production given above, illustrates the prosperity of this important industry. Exports of Australian boots have increased in value from £8161 in 1903 to £24,126 in 1906. In the latter year the value of the export from New South Wales was £10,778, and from Victoria, £12,896.

(iv.) *Hats and Caps.* (*a*) The manufacture of hats and caps is now well established in several of the States of the Commonwealth. The position of the industry in 1906 is shewn in the following table :—

HAT AND CAP FACTORIES, 1906.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
Number of factories	23	32	4	2	nil	nil	61
„ employés	1,036	1,319	122	50			2,527
„ male employés	342	526	*	30			898
„ female „	694	793	*	20			1,507
Actual horse-power of engines employed ...	107	243	9	32			391
Average number of months in operation during year	11.77	11.1	*	*			...
Approx. value of land and buildings £	*	55,156	5,530	*			60,686
„ „ plant and machinery £	32,750	24,588	6,083	*			63,421
Total amount of wages paid during year £	43,926	77,386	*	*			121,312

* Information not available. Totals of these items are exclusive of these States.

(*b*) As appears from the following table, which shews the progress of this industry in the States in which it was carried on during the years 1903 to 1906, there has been a considerable investment of capital in this industry in New South Wales and Victoria during recent years, and the industry is now in a flourishing condition in both these States. Information respecting production is unfortunately lacking. The export of Australian production in this industry has grown from £737 in 1903 to £1381 in 1906 :—

DEVELOPMENT OF HAT AND CAP FACTORIES, 1903 TO 1906.

State.	Number of Factories.				No. of Persons employed				Approximate Value of Plant and Machinery.			
	1903.	1904.	1905.	1906.	1903.	1904.	1905.	1906.	1903.	1904.	1905.	1906.
									£	£	£	£
New South Wales	15	18	21	23	543	729	904	1,036	22,152	26,117	29,650	32,750
Victoria	33	29	32	32	1,113	1,165	1,208	1,319	20,588	20,045	21.903	24,588
Queensland ...	5	6	8	4	131	128	144	122	7,284	7,311	7,161	6,083
South Australia ...	(2)	2	2	2	(57)	57	56	50	‡	‡	‡	‡
Commonwealth	55	55	63	61	1,844	2,079	2,312	2,527	50,024	53,473	58,714	63,421

‡ No information available.

(*c*) New South Wales exported hats and caps of Australian manufacture to the value of £680, and Victoria to the value of £701. Some idea of the production of Australia may be gathered from the fact that in 1906 interstate transfers of Australian felt hats amounted to £65,250, of sewn hats and caps to £10,033, and of hats, caps and bonnets, and hat and bonnet shapes generally to £71,646. The greatest part of these amounts were transferred from Victoria, and were probably, for the most part, the produce of that State.

(*d*) No special interest is attached to the other industries in this class. A considerable manufacture of ropes, cordage, mats, bags and sacks is carried on in the three eastern States and in South Australia.

9. **Industries of Class VIII.**—In this class are included the following industries:—Electrotyping and stereotyping, paper-making, paper boxes, bags, etc., photo-engraving, printing and binding. The greatest proportion of capital invested in this class is in newspaper printing. There are a few small paper mills, but the bulk of the paper and cardboard used in Australia is imported. The following table gives a description of the industries included in Class VIII. for the year 1906:—

INDUSTRIES OF CLASS VIII., BOOKS, PAPER, PRINTING, ETC., 1906.

Items.	N.S.W.	Vic.	Q'ld.	S.A.	W.A.	Tas.	C'wlth.
Number of factories	335	325	128	45	65	21	919
Percentage on State total	8.68	7.45	9.82	4.42	9.77	5.63	...
" class total	36.45	35.36	13.93	4.90	7.07	2.29	...
Average number of employés	6,961	7,371	2,114	1,366	1,127	626	19,565
Percentage on State total	8.94	8.65	8.82	6.73	8.74	7.37	...
" class total	35.58	37.67	10.80	6.98	5.76	3.21	...
Approx. value of land and buildings £	*573,686	763,209	370,617	†	197,642	23,900	1,929,054
" " plant and machinery £	671,321	675,446	207,420	†	148,921	43,148	1,746,256
Percentage on State total	8.09	10.47	4.84	...	8.00	5.13	...
Total amount of salaries and wages paid £	557,245	599,944	†	†	166,065	61,296	1,384,550
Percentage on State total	9.97	10.97	...	...	10.84	9.85	...

* 1901. † Information not available. Totals of these items are exclusive of these States.

The number of establishments in this class forms 7.94 per cent. of the total number of manufactories in the Commonwealth, and the number of persons engaged forms 8.55 of the total number of persons engaged in Commonwealth manufactories.

10. **Industries of Class IX.**—This class consists of musical instrument, sewing machine, etc., factories, and the work done in Australia therein consists chiefly of repairing work. There is in New South Wales one piano manufactory which has achieved great success. Information concerning the factories engaged in this industry is contained in the following table:—

INDUSTRIES OF CLASS IX., MUSICAL INSTRUMENTS AND SEWING MACHINES, 1906.

Items.		N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
Number of factories		6	3	Nil	1	Nil	Nil	10
Percentage on State total		0.16	0.07		0.09			...
" class total		60.00	30.00		10.00			...
Average number of employés		338	32		16			386
Percentage on State total		0.43	0.04		0.08			...
" class total		87.56	8.29		4.15			...
Approx. value of land and buildings	£	20,576*	5,440		†			26,016
Approx. value of plant and machinery	£	4,815	1,312		†			6,127
Percentage on State total		0.06	0.02		...			...
Total amount of salaries and wages	£	30,584	2,203		†			32,787
Percentage on State total		0.55	0.04		...			...

* 1901. † Information not available. Totals of items exclusive of South Australia.

The number of factories in this class forms 0.09 per cent. of the total number of factories in the Commonwealth, and the number of persons engaged in the industry forms 0.16 per cent. of the total number of persons employed in Commonwealth manufactories.

11. **Industries of Class X.**—These industries, viz., the making of arms and explosives, at present afford but little employment in Australia. A proposal to establish a Commonwealth explosives factory is at present under discussion. Information for the year 1906 will be found in the following table, New South Wales and Victoria being the only States concerned therein:—

INDUSTRIES OF CLASS X., ARMS AND EXPLOSIVES, 1906.

Items.	N.S.W.	Vic.	C'wlth.	Items.	N.S.W.	Vic.	C'wth.
Number of factories ...	3	5	8	Approximate value of plant and machinery £	270	44,206	44,476
" employés ...	17	330	347	Total amount of salaries and wages ... ... £	1,077	15,595	16,672
Approximate value of land and buildings £	*2,032	28,282	30,314				

* 1901.

The items given above concerning these industries form less than 1 per cent. of the total figures in each class of information for the respective States, and the number of factories and of employés forms less than 1 per cent. of the total in each case for the Commonwealth.

12. **Industries of Class XI.**—(i.) *General.* This class of industry, viz., the manufacture of vehicles, saddlery, harness, etc., includes coach and waggon building, cycles, perambulators, saddlery and harness, spokes, etc. In the following table is shewn its state for 1906:—

INDUSTRIES OF CLASS XI., VEHICLES, SADDLERY, HARNESS, ETC., 1906.

Items.		N. S.W.	Vic.	Q'land.	S. A.	W.A.	Tas.	C'wlth.
Number of factories		259	361	117	114	50	40	941
Percentage on State total		6.71	8.28	8.97	11.20	7.51	10.72	...
" class total		27.52	38.36	12.43	12.12	5.32	4.25	...
Number of employés		2,667	3,519	961	1,079	486	315	9,027
Percentage on State total		3.43	4.13	4.01	5.31	3.77	3.71	...
" class total		29.54	38.98	10.65	11.95	5.39	3.49	...
Approx. value of land and buildings	£	280,128*	325,855	101,964	†	61,385	30,540	799,872
" " plant and machinery	£	43,790	59,740	45,872	†	13,187	5,230	167,819
Percentage on State total		0.53	0.93	1.08	...	0.71	0.62	...
Total amount of salaries and wages paid	£	179,990	212,965	†	†	52,693	20,670	466,318
Percentage on State total		3.22	3.89	...	...	3.44	3.32	...

* 1901. † Information not available. Totals of these items are exclusive of these States.

The number of factories in this class forms 8.13 per cent. of the total number of factories in the Commonwealth in 1906, and the average number of persons employed in this class forms 3.95 per cent. of the average number of persons employed in Commonwealth factories in 1906.

(ii.) *Coach and Wagon Building.* This industry forms the principal branch of manufacture in this class. The following table gives particulars of it for the year 1906:—

COACH AND WAGON BUILDING, 1906.

Items.	N.S.W.	Vic.	Q'ld.	S.A.	W.A.	Tas.	C'wth.
Number of factories	179	255	60	46	37	19	596
" employés	1,718	2,573	507	464	304	152	5,718
" male employés	1,705	2,561	*	464	303	152	5,485
" female "	13	12	*	nil	1	nil	26
Actual horse-power of engines employed ...	131	278	52	110	56	16	643
Aver. time in operation during year (mths.)	11.89	11.90	*	*	10.82	12.00	...
Approx. value of land and buildings £	*	203,325	58,044	*	32,465	13,750	307,584
" " plant and machinery £	28,472	44,651	9,550	*	10,852	2,240	95,765
Total amount of wages paid during year £	113,986	155,979	*	*	32,621	9,974	312,560

* Information not available. Totals of these items are exclusive of these States.

The cycle industry consists of repairing and of the putting together of cycles from imported parts, and motor building has not so far been commenced in Australia, the shops in existence being only repairing shops.

13. **Industries of Class XII.**—This class includes the following industries, viz., docks and ships, sail-making, ship and boat building and repairing. The first industry is chiefly carried on in New South Wales, although a large dock also exists in Melbourne. The shipbuilding industry of the Commonwealth consists chiefly of the building of yachts and small vessels for coastal or South Sea Island trade. The principal work under this head consists of repairing work. The following table gives particulars for 1906:—

INDUSTRIES OF CLASS XII., SHIP AND BOAT BUILDING AND REPAIRING. 1906.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
Number of factories	34	11	19	6	5	8	83
Percentage on State total	0.88	0.25	1.46	0.59	0.75	2.14	...
" class total	40.96	13.25	22.89	7.24	6.02	9.64	...
Average number of employés	1,595	134	187	117	30	61	2,124
Percentage on State total	2.05	0.16	0.78	0.58	0.23	0.72	...
" class total	75.09	6.31	8.81	5.51	1.41	2.89	...
Approx. value of land and buildings £	*573,234	393,310	123,505	†	2,680	6,900	1,099,629
" " plant and machinery £	161,269	54,805	12,907	†	4,160	2,980	236,121
Percentage on State total	1.94	0.85	0.31	...	0.22	0.35	...
Total amount of salaries and wages £	167,136	13,263	†	†	3,900	3,339	187,638
Percentage on State total	2.98	0.24	...	...	0.25	0.54	...

* 1901. † Information not available. Totals of these items are exclusive of these States.

The total number of establishments in this class formed 0.72 per cent. of the total number of factories in the Commonwealth in 1906, and the total number of persons employed in this class formed 0.93 per cent. of the total persons employed in Commonwealth factories in 1906.

14. **Industries of Class XIII.**—(i.) *General.* This class comprises the following industries, viz.:—Bedding, flock, and upholstery, billiard tables, furniture and cabinet-making, picture frames, window blinds. Particulars for 1906 are as follows:—

INDUSTRIES OF CLASS XIII., FURNITURE, BEDDING, ETC., 1906.

Items.		N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	C'wlth.
Number of factories	...	119	183	50	30	24	12	418
Percentage on State total	...	3.08	4.20	3.83	2.96	3.61	3.22	...
" class total	...	28.47	43.78	11.96	7.18	5.74	2.87	...
Average number of employés ...	...	2,317	2,168	559	440	290	116	5,890
Percentage on State total	...	2.98	2.54	2.33	2.17	2.25	1.37	...
" class total	...	39.34	36.78	9.49	7.47	4.93	1.98	...
Approx. value of land and buildings	£	213,016*	245,165	54,275	†	42,135	15,050	569,641
" " plant and machinery	£	32,336	38.024	9,703	†	4,585	1,800	86,448
Percentage on State total	...	0.39	0.59	0.24	...	0.25	0.21	...
Total amount of salaries and wages	£	157,383	150,161	†	†	34,861	9,175	351,580
Percentage on State total	...	2.81	2.75	...	...	2.28	1.48	...

* 1901. † Information not obtainable. Totals of these items are exclusive of these States.

(ii.) *Furniture and Cabinet Making and Billiard Table Making.* (*a*) These industries constitute the principal manufactures in this class. The following table gives particulars for 1906:—

FACTORIES FOR FURNITURE AND CABINET MAKING AND BILLIARD TABLE MAKING, 1906.

Items.		N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
Number of factories	...	85	121	34	23	17	7	287
" employés	...	1,756	1,387	329	405	234	81	4,192
" male employés ...	...	1,734	1,353	...	402	232	64	4,114
" female "	...	22	34	...	3	2	17	78
Actual horse-power of engines employed	...	216	264	73	187	59	20	819
Average time in operation during year	...	11.57	11.50	...	...	11.70	12.00	...
Approx. value of land and buildings	£	...	161,899	29,425	...	31,875	14,600	237,799*
" " plant and machinery	£	21,479	18,504	5,893	...	4,065	915	50,856†
Total amount of wages paid during year	£	117,330	104,514	...	...	28,203	7,308	237,350‡

* Exclusive of New South Wales and South Australia. † Exclusive of South Australia.
‡ Exclusive of Queensland and South Australia.

(*b*) No information is available concerning the production of furniture in Australia. The export of Australian-manufactured furniture in 1906 was valued at £8331, of which about one-third was sent to New Zealand. Interstate transfers of Australian furniture in 1906 amounted to £65,970, of which a value of £37,280 was exported from Victoria. The imports of furniture into Australia in 1906 were valued at £212,526. It is evident that local manufactories supply the bulk of the furniture required in the Commonwealth.

15. **Industries of Class XIV.**—(i.) *General.* This class includes chemicals, drugs, and medicines, fertilisers, paints, varnishes, and by-products. Under the first head is to be noted the manufacture of a peculiarly Australian product, eucalyptus oil. The works are chiefly engaged in making up the ordinary articles of the chemist's trade. The most noteworthy feature of the fertiliser section is the recent establishment near Melbourne of large superphosphate works, operating upon material brought from the West Coast of Tasmania.

The total number of factories in this class forms 1.35 per cent. of the total factories in the Commonwealth, and the number of persons employed in this class forms 1.14 per cent. of the total number of persons employed in Commonwealth factories. The following table gives particulars of the class for 1906:—

INDUSTRIES OF CLASS XIV., DRUGS AND CHEMICALS. 1906.

Items.		N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
Number of factories	...	48	61	4	36	7	...	156
Proportion per cent. to State total	...	1.24	1.40	0.31	3.54	1.05	...	...
" " class total ...	...	30.77	39.10	2.56	23.08	4.49	...	...
Average number of employés ...	...	1,012	1,148	50	333	57	...	2,600
Proportion per cent to State total	...	1.30	1.35	0.21	1.64	0.44	...	...
" " class total...	...	38.92	44.15	1.92	12.82	2.19	...	...
Approx. value of land and buildings	£	50,111*	214,247	3,760	†	12,660	...	281,678
" " plant and machinery	£	107,276	114,671	8,270	†	10,970	..	241,187
Proportion per cent. to State total	...	1.29	1.78	0.19	...	0.59	...	...
Total amount of salaries and wages	£	62,893	77,249	†	†	5,476	...	145,618
Proportion per cent. to State total	...	1.12	1.41	...	...	0.36	...	...

* 1901. † Information not obtainable. Totals of these items are exclusive of these States.

(ii.) *Imports and Exports*. Statistics of production are not available. The exports of Australian drugs and chemicals have increased from £33,827 in 1903 to £38,260 in 1906; the exports of Australian manures from £46,997 in 1903 to £68,124 in 1906; and the exports of Australian medicines from £12,595 in 1903 to £32,768 in 1906. Importations of cream of tartar have increased from £94,082 in 1903 to £120,560 in 1906; importations of other drugs and chemicals from £134,402 in 1903 to £198,846 in 1906; and of medicines from £195.577 in 1903 to £217,633 in 1906.

16. **Industries of Class XV.**—This class refers to surgical, optical and other scientific instruments, and is a small but growing class of industry. The following are the particulars for 1906:—

INDUSTRIES OF CLASS XV., SURGICAL, OPTICAL AND OTHER SCIENTIFIC INSTRUMENTS, 1906.

Items.		N.S.W.	Vic.	Q'ld.	S.A.	W.A.	Tas.	C'wth.
Number of factories	...	8	11	5	1	1	...	26
Percentage on State total	...	0.21	0.25	0.38	0.09	0.15	...	...
" class total	...	30.77	42.31	19.23	3.85	3.84	...	..
Average number of employés ...	...	86	48	30	16	8	...	178
Percentage on State total	...	0.11	0.06	0.13	0.03	0.06	...	...
" class total	...	48.31	26.97	16.86	3.37	4.49	...	...
Approx. value of land and buildings	£	18,586*	8,151	6,030	†	3,380	...	36,147
" " plant and machinery	£	2,570	1,482	2,377	†	400	...	6,829
Percentage on State total	...	0.03	0.02	0.06	...	0.03	...	...
Total amount of salaries and wages	£	5,589	2,699	†	†	844	...	9,132
Percentage on State total	...	0.10	0.05	...	...	0.05	...	...

* 1901. † Information not available. Totals of these items are exclusive of these States.

The total number of factories forms 0.22 per cent. of the total number of factories in the Commonwealth in 1906, and the total number of persons employed forms 0.08 per cent. of the total number of persons employed in Commonwealth factories in 1906.

17. **Industries of Class XVI.**—This class refers to timepieces, jewellery and plated ware. The manufacturing consists chiefly of repairing and the making of small articles of ornament. A small amount of electro-plated ware is turned out. No timepieces are manufactured in the Commonwealth, although some work has been done in the erection of tower clocks.

The number of factories of this class, and of persons employed therein, constitute respectively 1.04 and 0.61 per cent. of the total number of factories, and total number of persons employed in factories of the Commonwealth.

The following are the particulars of this industry in 1906:—

INDUSTRIES OF CLASS XVI., TIMEPIECES, JEWELLERY AND PLATED WARE, 1906.

Items.		N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
Number of factories		33	55	15	10	3	5	121
Percentage on State total		0.85	1.26	1.15	0.98	0.45	1.34	...
,, class total		27.27	45.45	12.41	8.26	2.48	4.13	...
Average number of employés		457	651	107	113	26	43	1,397
Percentage on State total		0.59	0.76	0.71	0.56	0.20	0.51	...
,, class total		32.71	46.61	7.66	8.09	1.86	3.07	...
Approx. value of land and buildings	£	*13,618	85,070	21,548	†	3,250	6,140	139,176
,, ,, plant and machinery	£	12,192	15,972	5,910	†	800	705	35,579
Percentage on State total		0.15	0.25	0.14	†	0.04	0.08	...
Total amount of salaries and wages	£	33,990	54,171	†	†	3,402	3,548	95,111
Percentage on State total		0.62	0.99	...	...	0.22	0 .57	...

* 1901. † Information not available. Totals of these items are exclusive of these States.

18. **Industries of Class XVII.**—(i.) *General.* The important class referring to heat, light, and power comprises the following industries:—Coke works, electric apparatus, electric-light power, gas works and kerosene, lamps and fittings, and hydraulic power. The following are the particulars for 1906:—

INDUSTRIES OF CLASS XVII., HEAT, LIGHT, AND POWER, 1906.

Items.		N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	C'wlth.
Number of factories		139	68	25	9	25	6	272
Percentage on State total		3.60	1.60	1.92	0.88	3.76	1.61	...
,, class total		51.10	25.00	9.19	3.31	9.19	2.21	...
Average number of employés		1,883	1,673	350	229	342	357	4,834
Percentage on State total		2.42	1.96	0.45	1.13	2.65	4.2	...
,, class total		38.95	34.61	7.24	4.74	7.07	7.39	...
Approx. value of land and buildings	£	*567,815	649,699	118,501	†	98,031	36,350	1,470,396
,, ,, plant and machinery	£	1,705,857	1,780,398	446,632	†	561,441	203,870	4,698,198
Percentage on State total		20.56	27.60	10.43	...	30.16	24.30	...
Total amount of wages and salaries	£	200,922	188,769	†	†	57,174	28,176	475,041
Percentage on State total		3.60	3.45	...	...	3.73	4.53	...

* 1901. † Information not available. Totals of these items are exclusive of these States.

The number of establishments in this class, and of persons employed therein, form 2.35 and 2.11 per cent. respectively of the totals for the Commonwealth. The value of plant and machinery of the five States furnishing returns forms 21.70 per cent. of the total value of the plant and machinery in those States.

(ii.) *Electric Light and Power.* Particulars of the electric light and power works of the Commonwealth in the year 1906 are as follows:—

ESTABLISHMENTS FURNISHING ELECTRIC LIGHT AND POWER, 1906.

Items.		N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
Number of factories		66	9	6	2	18	3	104
,, employés		565	363	70	86	247	228	1,559
Actual horse-power of engines employed...		30,505	9,130	3,255	1,700	13,334	2,747	52,671
Average time in operation during year ...		11.94	12.00	*	*	12.00	12.00	...
Approx. value of land and buildings	£	*	144,329	*	10,151	65,040	†	219,510
,, ,, plant and machinery	£	975,723	491,171	63,334	*	477,198	72,870	2,080,346
Total amount of wages paid during year	£	65,892	38,398	*	*	43,271	11,616	159,177

* Information not available. Totals of these items are exclusive of these States. † Crown land.

Several of the capitals and other principal towns of Australia are lit with electric light. the generating and other plant being in some cases owned by the municipality and in others by companies. Electric tram services also run in many of the cities. Further particulars on this subject will be found in the sections "Transport and Communication" and "Local Government."

Electricity is also largely in use for lighting and power in mines and is growing in favour as a motive power in manufactories.

A scheme of electrification of the Melbourne suburban railway system has been under discussion, and an expert engineer was brought out to report upon its desirability.

(iii.) *Gasworks*. Gasworks are also in operation all over Australia, and gas is still the principal illuminant in private houses. It is also used to a large extent as a factory motive power. Further information on gasworks will be found in the section "Local Government."

(iv.) *Hydraulic Power*. Hydraulic power is supplied by means of high-pressure mains in several of the Australian cities.

(v.) *Kerosene Shale*. A commencement of an oil industry has been made. There are in several parts of the Commonwealth, notably in New South Wales, valuable deposits of kerosene shale. These have been worked since 1865 in the State mentioned. Particulars on this subject will be found in section xii., Mineral Industry.

19. **Industries of Class XVIII.**—This class relates to the manufacture of leather belting, fancy leather, portmanteaux and bags. The industries are not extensive. The following are the particulars for 1906:—

INDUSTRIES OF CLASS XVIII., LEATHER BELTING, FANCY LEATHER, PORTMANTEAUX AND BAGS, 1906.

Items.		N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
Number of factories		12	22	3	3	1		41
Percentage on State total		0.31	0.50	0.23	0.29	0.15		...
,, class total		29.27	53.64	7.32	7.32	2.45		...
Average number of employés		240	389	65	22	15		731
Percentage on State total		0.31	0.46	1.46	0.11	0.12		...
,, class total		32.83	53.21	8.89	3.02	2.05	Nil	...
Approx. value of land and buildings	£	*24,154	25,091	4,600	†	780		54,625
,, ,, plant and machinery	£	6,085	8,835	394	†	30		15,344
Percentage on State total		0.07	0.14	...	...	...		...
Total amount of salaries and wages	£	14,218	22,590	†	†	936		37,744
Percentage on State total		0.25	0.41	...	...	0.06		...

* 1901. † Information not available. Totals of these items are exclusive of these States.

In 1906 the number of factories in this class, and the persons employed therein, formed 0.35 and 0.96 per cent. respectively of the total factories in the Commonwealth and the total number of persons employed therein.

20. **Industries of Class XIX.**—In this class are comprised basket and wickerware, matting, etc., brooms and brushware, rubber goods, toys, umbrellas, other industries. These trades are engaged in the manufacture of articles of large and daily use, and are gradually growing in Australia.

For 1906 the number of factories in this class forms 0.95 per cent. of the total number of factories in the Commonwealth, and the number of persons employed therein forms 0.96 per cent. of the persons employed in Commonwealth factories.

The following are the particulars for 1906:—

INDUSTRIES OF CLASS XIX., MINOR WARES.

Items.		N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
Number of factories		45	33	8	16	6	2	110
Percentage on State total		1.16	0.76	0.62	1.57	0.90	0.54	...
„ class total		40.91	30.00	7.27	14.55	5.45	1.82	...
Average number of employés		681	919	161	341	68	24	2,194
Percentage on State total		0.88	0.78	0.67	1.68	0.53	0.28	...
„ class total		31.04	41.89	7.34	15.54	3.10	1.09	...
Approx. value of land and buildings	£	41,055*	57,604	9,450	†	6,210	1,850	116,169
„ „ plant and machinery	£	16,174	47,831	1,637	†	380	20	66,042
Percentage on State total		0.19	0.74	0.04	...	0.08	...	...
Total amount of salaries and wages	£	33,008	59,190	†	†	4,747	400	97,345
Percentage on State total		0.59	1.08	...	...	0.81	0.07	...

* 1901. † Information not available. Totals of these items are exclusive of these States.

§ 9. Conclusion.

The result of a survey of the individual industries and classes of industry in Australia is the same as of a survey of the general statistics, namely, that there are strong evidences of general prosperity and rapid development. In addition, it is to be noted that Australian manufacturing is now upon a firm basis with respect to many articles, and that there is an increasing export business in these commodities.

It is much to be regretted that the information available is defective for some of the States, but it is confidently expected that the particulars obtained for 1907 will everywhere be tabulated on the same plan, and that it will therefore be possible to present a more complete picture of the Australian manufacturing industries in the next issue of this work.

It may be mentioned that a Bonus Bill was introduced by the Commonwealth Government in Parliament during 1907, and became law towards the end of the year. It deals however almost exclusively with primary production, and its discussion in relation to manufacturing developments need not be here specially considered.

SECTION XIV.

WATER CONSERVATION AND IRRIGATION.

§ 1. Water Supply Works.

1. **General.**—In every country in which droughts are recurrent, there are few problems of greater importance to be solved than that of an adequate system of water conservation. Much has been done so far as the supply of water to centres of population is concerned, and a description of several of the metropolitan water works will be found herein, viz., in the section dealing wiith "Local Government."

2. **The Goldfields Water Supply of Western Australia.**—The scheme by which the Government of Western Australia undertook to provide a permanent supply of water for the population on the eastern goldfields of that State comes properly under the heading of "Water Supply Works," but owing to its magnitude and special character it could not be included in the section "Local Government."

The Act under which the works were constructed was introduced in Parliament by Sir John Forrest, G.C.M.G., then Premier of Western Australia, in September, 1896, and provided for an expenditure of £2,500,000 and a daily supply of 5,000,000 gallons. The works, designed by the late Mr. C. Y. O'Connor, Engineer-in-Chief of the State, were originally known as the "Coolgardie Water Scheme," but are now officially called the "Goldfields Water Supply." So soon as the Act was passed through Parliament the works were energetically undertaken, so that, apart from reticulation works, the whole scheme was completed early in 1903, viz., in about six years. The scheme is unique in more than one way. The weir across the Helena River, near Mundaring, at a point where the width between the banks is 760 feet, is the highest overflow weir in existence. The surplus water flows directly over the weir crest and down the solid concrete face of the wall to the river 100 feet below. The capacity of the Mundaring reservoir is 4,600,000,000 gallons, and its daily output capacity 5,000,000 gallons. The main service reservoir from which the goldfields towns are supplied, is situated at Bulla Bulling, 351 miles from Mundaring, and at an altitude 1200 feet above that of the last-named locality. It becomes, therefore, necessary to pump a daily quantity of 5,000,000 gallons of water, weighing approximately 22,300 tons, over a distance of 351 miles, and to raise it 1200 feet. This is done by means of eight pumping stations along the principal main, the diameter of which is 2 feet 6 inches. The area to which the trading operations of the scheme are confined extends from Guildford, in the west, to Kanowna, in the east, and there are twelve smaller reservoirs and tanks, with a total capacity of 31,500,000 gallons, in the neighbourhood of the towns which are supplied with water from the scheme. The total cost was £3,078,500, and the price of water ranges from two shillings and sixpence in the western area to eight shillings and fourpence at Kanowna, with an average of about five shillings and sixpence. The income is sufficient to pay interest and working expenses, but payments to the 3 per cent. sinking fund which is provided in the Act authorising the scheme have so far been mainly made out of general revenue.

3. **The Mines Water Supply Branch.**—Prior to the commencement of the Goldfields Water Supply Scheme works of different kinds were carried out by Government in order to afford temporary relief to the population on the goldfields. These works com-

prised shallow and artesian boring, conservation and protection of water in natural and artificial reservoirs, sinking of wells, erection of condensers, etc. Administratively the goldfields area is divided into three water supply districts—Coolgardie, Murchison, and Pilbara. It has been the policy of the department charged with the supervision of water supply works, viz., the Mines Department, to lease watering stations wherever that could be done to advantage, and from twenty to thirty leases are generally executed in the course of a year. The tanks which have been constructed by the department vary in size from 200,000 gallons to 37,500,000 gallons (at Niagara).

§ 2. Artesian Wells.

1. **General.** (i.) *The Great Australian Artesian Basin.* Although there are some artesian wells outside this area, yet, in speaking of the "Great Australian Artesian Basin," the area is understood which includes (*a*) considerably more than one-half of Queensland, taking in practically all that State lying west of the Great Dividing Range, with the exception of an area in the north-west contiguous to the Northern Territory; (*b*) a considerable strip of New South Wales along its northern boundary and west of the Great Dividing Range; and (*c*) the north-eastern part of South Australia proper, together with the extreme south-eastern corner of the Northern Territory. This basin (shewn approximately by map in Section XXVI., Local Government), is said to be the largest yet discovered, and is about 569,000 square miles, of which 376,000 square miles are in Queensland, 110,000 square miles in South Australia, and 83,000 square miles in New South Wales. The area of the intake beds is estimated at 68,000 square miles, viz., 50,000 square miles in Queensland and 18,000 square miles in New South Wales. The basin is what is technically known as a one-sided or half-basin, the intake beds outcropping along its eastern and north-eastern sides only, while the remainder of the water-bearing formation is hidden under the superficial deposits forming the plains of the interior of the States. Although it has not been definitely decided whether the basin has outlets towards the Gulf of Carpentaria in the north, and towards the Great Australian Bight or towards Lake Eyre in the south, there is a preponderance of opinion and strong evidence in favour of the existence of such outlets, an opinion which receives strong support from the maps published by the Geological Department of Queensland, which shew an apparent dip in the water-bearing strata towards the Gulf of Carpentaria in the north and towards Lake Eyre and the Great Australian Bight in the south.

(ii.) *The Western Australian Basin.* The Recent and Tertiary strata which enter Western Australia at its eastern border, and which have a prevailing dip towards the Great Australian Bight, form an artesian water area. But where boring operations have been undertaken the water has been found to be salt or brackish, and there are other conditions affecting the supply, such as local variations in the thickness of the beds, their relative porosity, and the unevenness of the floor upon which they rest, which so far have not been examined with sufficient thoroughness to enable many particulars to be given in regard to this basin.

In the coastal area to the west of the Darling Range artesian boring has, on the other hand, been carried on successfully for many years.

(iii.) *Plutonic or Meteoric Water.* While it has long been held that the Australian artesian basin is a typically-formed one, and that its intake beds are as described above, a theory has been recently advanced (viz., by Professor Gregory,[1] formerly of Melbourne, but now of Glasgow University), that the water, although called artesian, is not impounded rain-water, or *meteoric* water at all, but is derived from the older rocks, *i.e*, that it is *plutonic* in character. If this were so, and if the water contained in the basin were merely such as occurs in the molten lava from volcanoes or imprisoned in the solidified quartz of granites, we should, of course, be rapidly exhausting our supply. He founds his main arguments on (*a*) the amount of friction caused by the flow of water through the minute interstices between the sand grains, *i.e.*, on the loss of its hydrostatic head before the bores are reached; (*b*) on anomalies in temperature and pressure; (*c*) on the chemical analysis of some of the waters; and (*d*) on evaporation measurements in Central Australia. He suggests the pressure of overlying rock, and gas pressure caused by the internal heat of the earth, as causes of the flow from the bores.

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[1] See *J. W. Gregory, F.R.S., D.Sc.*: "The Dead Heart of Australia"; London, John Murray, 1906.

This new theory has recently been replied to at length by the Government Geologist of New South Wales.[1] While this Year Book is hardly the place to enter at length upon arguments of a purely scientific nature, it may be said that Mr. Pittman avers that "many of Professor Gregory's statements appear to be in opposition to observed facts." In regard to the loss of hydrostatic head, he quotes the opinion of the United States Geological Survey in regard to bores in Kentucky, and the experience in connection with the Grenelle bore in Paris. So far as temperature is concerned, he shews that it would be illogical to contend that, because some Australian bores give higher rates of increase than the average results of a number of ascertained bores and tunnels in other parts of the world, the water must be plutonic and not meteoric. In regard to pressure, stress is laid on the more accurate results obtained with the dumpy level than with the aneroid, and it is shewn how accurately the height to which the water would rise has been predicted in many localities. It is also pointed out that the isopotential lines as laid down are tentative, as information in regard to many private wells is unreliable. The question of the chemical constituents of artesian water is dealt with at length, and it appears that instead of decreasing from east to west, as stated by Professor Gregory, the salinity of the water actually increases, and that some of the wells in the eastern district mentioned by the latter as being particularly rich in saline matter are actually outside the artesian basin altogether.

In regard to evaporation measurements in Central Australia, Mr. Pittman shews also that these do not affect the question at issue at all, as the water does not enter the porous beds in Central Australia, but on the flanks of the Dividing Range, where the rainfall is copious. The theories of the pressure of overlying rock and of gas pressure are also utterly repudiated.

The strength of the argument seems to be unquestionably in favour of the older theory of meteoric water, as upheld by Mr. Pittman, and in his reply he appears to have disposed of every feature in Professor Gregory's argument to which weight might have been attached.

2. **Queensland.**—The publication of the valuable reports issued annually by the Hydraulic Engineer of Queensland has been suspended during the last five years, and complete statistics are only available to 30th June, 1902. At that date the following bores were in existence :—

QUEENSLAND ARTESIAN BORES ON 30TH JUNE, 1902.

Sunk by—	Artesian Flows.	Sub-Artesian Flows.	Pumped Supplies.	In Progress; Abandoned; Uncertain.	Total.
Water Supply Department (trial borings)	22	...	3	24	49
Railway Department	2	...	2	13	17
Local governing authorities	10	...	15	5	30
Private owners	530	9	131	168	838
Total ...	564	9	151	210	934

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[1] *E. F. Pittman, A.R.S.M., Government Geologist of New South Wales:* "Problems of the Artesian Water Supply of Australia, with special reference to Professor Gregory's Theory." (Clarke Memorial Lecture, delivered before the Royal Society of New South Wales, 31st October, 1907).

The depth of 850 of these wells is given, and it appears that there were 229 less than 500 feet deep, 200 from 500 to 1000 feet, 231 from 1000 to 2000 feet, 124 from 2000 to 3000 feet, and 66 over 3000 feet. The deepest well was one known as Bimerah Run No. 3, Whitewood, lying between the Barcoo and Thomson Rivers; this had a depth of 5045 feet, and was stated to yield 70,000 gallons daily. This flow is, of course, a comparatively small one, many wells yielding, when uncontrolled, from one to three million gallons a day. A well at Cunnamulla is stated to have a daily flow, when uncontrolled, of no less than 4,500,000 gallons. The waters of many of the wells have been analysed, and some found suitable for wool-scouring only, others are suitable for watering stock but not for irrigation, owing to the presence of alkali; others again serve for both stock and irrigation, while some, such as those containing sulphuretted hydrogen, are not of any use. Water fit for stock may generally be said to be " safe" for domestic purposes in spite of its slightly mineral taste. The wells yielding the mineral water known as " Helidon Spa," which is much in use in Queensland and New South Wales, are shallow wells from 60 to 200 feet in depth.

In 1906 the total number of artesian wells in Queensland has been stated to be 1132, of which 120 were Government wells.

3. **New South Wales.**[1]—Artesian boring in New South Wales dates from 1879, when a private bore was put down on the Kallara pastoral holding, between Bourke and Wilcannia. The first Government bore was that at Goonery, on the Bourke-Wanaaring road, completed in 1884. At the end of 1906, out of 412 known wells in New South Wales, 130 were Government wells, a very much larger proportion than in Queensland.

The distribution of these wells was as follows:—

NEW SOUTH WALES.—ARTESIAN BORES ON 31ST DECEMBER, 1906.

Purpose of Bore.	Flowing.	Pumping.	Failure.	Total.	Under Construction.
Private	183	27	20	230	6
Artesian wells district	13	1	1	15	...
Water and Drainage Trust district ...	24	...	...	24	3
Country towns water supply ...	2	...	...	2	...
Public watering place	47	27	17	91	...
Improvement lease	46	1	3	50	1
Total	315	56	41	412	10

In 390 cases the depth of the wells is stated, and it appears that only 18 wells were less than 500 feet deep; while 76 ranged from 500 to 1000 feet; 215 from 1000 to 2000 feet; 64 from 2000 to 3000 feet; and 17 over 3000 feet. As in Queensland, there is a preponderance of wells from 1000 to 2000 feet in depth, but neither the shallow wells under 500 feet, nor the very deep wells over 3000 feet are so numerous in proportion as in the northern colony. The two deepest wells in New South Wales are those at Boomi, in County Benarba, with a depth of 4008 feet and a daily outflow of 1,428,640 gallons; and at Dolgelly, in the Parish of Careunga, in County Stapylton, with a depth of 4086 feet, and an outflow of 682,200 gallons per day. The largest outflow is stated to be that at the Munna Munna well, in county Leichhardt, which yields 1,657,230 gallons a day, and has a depth of 2197 feet.

The water of a large number of wells has been analysed by Mr. J. C. H. Mingaye, F.C.S., etc., of the New South Wales Mines Department, and it may be of interest to give a list of those containing, among all the wells examined, the maximum quantities of particular salts in solution:—

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[1] See *Percy Allan, M. Inst. C.E., M. Am. Soc. C.E., Principal Assistant Engineer for Water Conservation in New South Wales*, in "The Drought Antidote for the North-West." (Lecture delivered before the Sydney University Engineering Society, October 10h, 1906.)

NEW SOUTH WALES ARTESIAN BORES—CHEMICAL ANALYSIS.

Name of Bore.	County.	Salt found in greater quantity than in any other bore.[1]	Grains per Imperial Gallon.
Tunderbrine No. 1	Gowen	Sodium carbonate ($Na_2\ CO_3$)	124.7
Fort Bourke	Gunderbooka	Potassium carbonate ($K_2\ CO_3$)	12.3
Gaffney's	Barrona	Calcium carbonate ($Ca\ CO_3$)	10.5
Bancanya	Mootwingee	Magnesium carbonate ($Mg\ CO_3$)	10.7
Cuttaburra	Irrara & Barrona	Sodium chloride ($Na\ Cl$)	349.0
Warratta	Evelyn	Potassium chloride ($K\ Cl$)	22.1
Momba	Fitzgerald and Yungnulgra	Magnesium chloride ($Mg\ Cl_2$)	28.0
Sandy Creek	Mootwingee	Sodium sulphate ($Na_2\ SO_4$)	28.1
Gilgandra	Ewenmar	Potassium sulphate ($K_2\ SO_4$)	19.3
Wingadee No. 1	Leichhardt	Iron oxide ($Fe_2\ O_3$) and alumina ($Al_2\ O_3$)	1.4
Coonamoona	„	Silica ($Si\ O_2$)	4.5
Momba	Fitzgerald and Yungnulgra	Calcium chloride ($Ca\ Cl_2$) and calcium sulphate ($Ca\ SO_4$)	22.2 & 12.0
Burrawang No. 2, I.L. 1211	Cunningham	Total solid matter	1802.0

[1] This is, of course, not necessarily the salt found in greatest quantity.

The Zetz Spa, much used as a mineral water in New South Wales, comes from Ballimore, near Dubbo.

It may be said that the cost of artesian wells works out at an average of about 17s. 6d. per lineal foot; it depends, of course, upon the depth to which boring operations have to be extended, and on the accessibility of the bore to a railway station. Contracts have recently been let for boring and the use of six-inch casing at the following rates:—To 1000 feet, 11s. per foot; 1000 to 1500 feet, 12s. 6d.; 1500 to 2000 feet, 13s.; 2000 to 2500 feet, 14s.; 2500 to 3000 feet, 16s.; 3000 to 3500 feet, 19s.; 3500 to 4000 feet, 24s. To these prices must be added the cost of cartage and of finishing off the work.

4. **South Australia.**—The information about artesian wells is very defective, and relates to the year 1903. At that time a list of twenty of the principal Government bores was published, of which four were under 500 feet in depth, eight from 1000 to 2000 feet, three from 2000 to 3000 feet, and five over 3000 feet. The deepest flowing well was at Mount Gason, measuring 4420 feet, and yielding 500,000 gallons per day. An unfinished well at Goyder's Lagoon had, however, reached a depth of 4440 feet. The maximum flows, viz., 1,250,000 gallons daily in each case, occurred at Strangways and Coward.

Artesian water has also been found outside the basin in the Adelaide Plains, where at Virginia, thirty miles north of Adelaide, a daily flow of 24,000 gallons is obtained.

5. **Victoria.**—Victoria lies altogether outside the artesian basin, and, as water is obtainable in most parts of the State at shallow depths, there has not been much occasion for artesian boring. As early as 1884, however, an artesian well was bored at Sale, which for a number of years gave a supply of about 100,000 gallons per day until, either through corrosion of the casing or by choking up with sand from below, the flow ceased. In 1905 a new bore was, therefore, put down, which at a depth of 277 feet yielded sufficient water to fill Lake Guthridge, a local depression. But as the water was impure and contained too much sulphuretted hydrogen boring operations were continued to 520 feet, when the lowering of the casing shut off the supply of water. A second bore was then put down at some distance from the first, and this, at a depth of 238 feet, yielded fresh and clear water. The supply at present is stated to be about 145,000 gallons per day.

In 1906 eight bores were put down on the Overnewton Estate, Maribyrnong, to depths varying from 147 to 272 feet; small supplies of good and medium water for stock purposes were obtained, but only one of the wells yielded water fit for drinking purposes.

6. **Western Australia.**—Out of twenty-four artesian bores put down by the Mines Department Water Supply Branch in the artesian basin east of the Darling Range, fifteen were less than 500 feet in depth; five between 500 and 1000 feet; three between 1000 and 2000 feet; and one only, at Davyhurst, over 2000 feet, viz., 3624 feet.

The number of wells between the Darling Range and the coast is stated at forty-two, of which fourteen were less than 500 feet; nine from 500 to 1000 feet; sixteen from 1000 to 2000 feet; two from 2000 to 3000 feet; and one over 3000 feet. The last-named bore, situated at Carnarvon, is 3011 feet in depth, and yields a daily supply of 515,000 gallons. The maximum outflow, 1,167,000 gallons per day, is said to be obtained from a well at Guildford.

§ 3. Irrigation Plants.

1. **General.**—Various causes have combined to keep proposals for irrigation works on a large scale before the Parliaments of several of the States for a number of years without any very tangible results, except in the case of Victoria and South Australia. The absence of the example of any country which has constructed such works under similar climatic and labour conditions, the very partial success of some of the smaller works undertaken in Australia, and the abundant supply of artesian water obtained during the last twenty years in parts of the continent most liable to droughts, have all tended to delay the undertaking of any large works.

2. **Victoria.**—(i.) *Classification of Works.* The Water Conservation Works in Victoria naturally divide themselves in those providing mainly a domestic supply, such as the Yan Yean works, controlled by the Melbourne and Metropolitan Board of Works; the Coliban, Geelong, Broken River, Kerang Lakes, and Mallee Supply works, which, although now administered by the State Rivers and Water Supply Commission, are properly local government works; other works for domestic supply controlled by Water Works Trusts or Municipal Corporations, and irrigation works proper. With the exception of the last-named class particulars as to these works will be found in the section "Local Government" of this book.

(ii.) *Works Controlled by the Commission.* With the exception of the First Mildura Irrigation and Water Supply Trust, these works are now all under the control of the State Rivers and Water Supply Commission, which was created by the Water Act 1905, in force since 1st May, 1906. The works comprise the following:—

(*a*) The Goulburn River works (including the Waranga Basin, with a storage capacity of 9500 million cubic feet, and constructed at a cost of £701,190;
(*b*) The Loddon River works, with a storage capacity of 610 million cubic feet, constructed at a cost of £153,674;
(*c*) The Kow Swamp works, with a storage capacity of 1780 million cubic feet, constructed at a cost of £180,400; and
(*d*) Nineteen other irrigation and water supply districts, the capital expenditure on which has been £803,722.

Many of the original irrigation trusts had been badly managed and were in financial difficulties when they were taken over by the Commission, and it became necessary for Government to write off considerable amounts both of capital debt and of arrears of interest, so that the capital cost of the works taken over by the Commission, including works for domestic supply, on 30th June, 1907, stood as follows:—

(*a*) Free head works, in respect of which no charge for interest is to be made against any district served by these works		£1,172,027
(*b*) Other State works...		1,749,892
(*c*) Branch distributory channels connected with Long Lake free head works		10,370
(*d*) Irrigation and water supply works—		
Total advances	£791,528	
Less repaid, £5591; and written-off, £540,404 ...	545,995	
		245,533
Total		£3,177,822

The Commission is charged with the duty of assessing the values of properties served by the various water supply works, and of imposing thereon certain rates. As, however, the rates for 1906-7 were mainly collected on the basis of the old municipal assessments, and as struck by the dissolved trusts, it may suffice to state that the Commission estimates its receipts for the year 1907-8 at £80,000, and the expenditure at £70,279.

(iii.) *Mildura.* The first settlement of Mildura dates from 1884. After being managed until 1887 by Chaffey Bros., and then until 1895 by Chaffey Bros. Company Limited, it was in that year taken over by the First Mildura Irrigation Trust, and has since then made great progress. Its population, which at the Census of 1891 was 2321, had by September, 1906, increased to 4350. The exports of dried and canned fruit from Victoria, nearly all of which came from Mildura, amounted in 1906 to £96,580, viz.:— Canned fruits, £39,804; dried fruits—raisins, £47,114; other, £9662. Of these exports £91,177 worth were sent to the other States of the Commonwealth, chiefly New South Wales, Queensland, and Western Australia, while the balance of £5403 was exported oversea.

The capital cost of the Mildura irrigation works is stated at £58,700.

(iv.) *Area Irrigated.* The total area of districts served by irrigation plants in 1906-7 is given as 2,702,180 acres, of which 160,574 acres were irrigated. Of this area 12,069 acres were under cereals, 41,373 acres under lucerne and other permanent fodder crops, 10,183 acres under sorghum and other annual fodder crops, 59,008 acres under pasture, 35,941 acres (of which 28,640 acres at Mildura) were vineyards, orchards, and gardens, 1922 acres were in fallow, while the balance of 78 acres was taken up by miscellaneous minor crops.

(v.) *The Trawool Scheme.* A project has been mentioned of constructing a weir across the Upper Goulburn river at the Trawool Gorge, in the neighbourhood of Seymour. If this scheme should ever be carried out, the weir would have to be about 1700 feet long, and at the deepest part of the river 140 feet high. It is expected that the weir would impound water for about twenty miles upstream, and that it would provide a reservoir of a capacity of 60,000 million cubic feet. This would make it by far the largest reservoir in existence, the Assouan dam only holding 35,840 million cubic feeet, while the capacity of the Waranga basin amounts to 8811 million cubic feet. The Barren Jack reservoir, now in course of construction in New South Wales, will, with water of a maximum depth of 200 feet, hold 33,380 million cubic feet, but as it is now being built, providing for a depth of 120 feet only, is limited to 7000 million cubic feet.

3. **South Australia.**—(i.) *The Renmark Irrigation Trust.* The Renmark Irrigation Trust was established on similar lines to Mildura, but on a considerably smaller scale. At present the land assessed for the purposes of the trust measures about 3600 acres, and maintains a population of about 1000. The export of Renmark products averages about £35,000 per annum. It is claimed that without irrigation the land would barely feed 500 sheep.

(ii.) *Other Waterworks.* The Bundaleer reservoir consists in a large earth and clay embankment which impounds water in a natural basin away from the main water-courses. Its capacity is stated as 1,319,000 gallons.

The Barossa waterworks have a reservoir wall of concrete seventy-five feet in height. The reservoir has a holding capacity of 993,340,000 gallons.

The largest of the South Australian undertakings is the Beetaloo waterworks, which command the towns of Port Pirie, Moonta, Wallaroo, Kadina, and fifteen others, besides one million acres of country lands. The cast-iron reticulation pipes in connection with Beetaloo are 637 miles in length, and the capital cost of the works was £989,950.

None of the South Australian works, Renmark excepted, are, however, irrigation works properly so called, although they are to some extent used for irrigation purposes.

4. **New South Wales.**—(i.) *Irrigation Trusts.* The first attempts at irrigation, apart from artesian wells, were made by the establishment of the three Irrigation Trusts of Wentworth in 1890, Hay in 1892, and Balranald in 1893. The Wentworth Trust controlled an area of 10,600 acres, but has been dissolved and its powers assumed by Government. The original area under the Hay Trust was 12,847 acres, but in 1896 this was reduced to 3000 acres. The trust was at the same time remodelled through having three Government officials appointed as members. The Balranald Trust controls 1000 acres; it has petitioned Government for dissolution and for the administration of its works to be handed over to the Western Land Board.

(ii.) *Private Irrigation Works.* The most extensive private irrigation works in the State are those at North Yanko, which take their water from Cudgell Creek, a tributary of the Murrumbidgee.

(iii.) *The Barren Jack Scheme.* The weir which will impound the waters at Barren Jack is situated about three miles below the confluence of the Murrumbidgee and Goodradigbee Rivers. The catchment area will be fully 5000 square miles, and it is estimated that if the dam is constructed to a sufficient height to allow of a maximum depth of 120 feet of water the capacity of the basin will be about 7,000,000,000 cubic feet. If, however, a larger supply be required it will be possible to raise the weir, so as to allow of a depth of 200 feet of water. This would give the reservoir a total capacity of 33,380,000,000 cubic feet, very nearly equal to that of the Assouan dam. The distributing channels in connection with this work, as it is at present being carried out, will command an area of about 358,000 acres, of which 196,000 acres is first-class land.

(iv.) *Other Schemes.* Of other projects, the execution of which is probably only a matter of time, may be mentioned:—

(*a*) The Wyangala scheme, which would tap the Lachlan below its junction with the Abercrombie River;

(*b*) The Terramungamine scheme, which would draw its water from the Macquarie River, in the neighbourhood of Narromine; and

(*c*) The Bungowannah scheme, which would be connected with the Murray not far from Albury.

5. **Conflicting Interests.**—The relative rights of the States of New South Wales, Victoria, and South Australia to the waters of the Murray River appeared to be indeterminate. Territorially the south bank of the Murray was the boundary between the two former States, *i.e.*, the region of the river itself, up to the point where it enters South Australia, was wholly within New South Wales.

At the Federal conventions which preceded the establishment of the Commonwealth the South Australian representatives expressed their fear lest too much irrigation on the Murray and Darling might impair the navigability of the latter river, and the result was the insertion of a provision in the Commonwealth Constitution which reads as follows:—

"*Section 100.*—The Commonwealth shall not, by any law or regulation of trade or commerce, abridge the right of a State or the residents therein to the reasonable use of the waters of rivers for conservation and irrigation."

Under this section negotiations have for a considerable time been in progress between the three interested States, and a satisfactory arrangement has at last been come to under which, subject to Parliamentary sanction being given to the arrangement in the three States concerned, the navigability of the Darling will be maintained, while at the same time New South Wales and Victoria will be able to construct large irrigation works.

SECTION XV.

COMMERCE.

§ 1. Introductory.

1. **General.**—The development of the commerce of Australia might be considered from several standpoints—for example, the historical, the legal, or the purely financial—all of which are important. The natural introduction would have been a sketch of the History of Australian Commerce; this, however, must be reserved for a future issue of the Year Book.

The importance of the subject demands a reference to the constitutional power of the Commonwealth in respect to commerce and to the various Acts which have been passed in the exercise of that power, since these profoundly affect its trade and commerce.

In setting out the statistics of commerce regard will be had to the significant features of its development, both from an historical and financial point of view.

2. **Constitutional Powers of Commonwealth in regard to Commerce.**—Under the provisions of the Commonwealth Constitution Act [*vide* pp. 21-37 of this volume] power to make laws with respect to "trade and commerce with other countries and among the States" is vested in the Commonwealth Parliament. [Chap. I., Part V., sec. 51. (i.), *vide* p. 27.]

The Constitution Act further provides in relation to trade, that:—

"On the establishment of the Commonwealth, the collection and control of duties of customs and of excise, and the control of the payment of bounties, shall pass to the Executive Government of the Commonwealth. [Section 86, p. 33.]

"Uniform duties of customs shall be imposed within two years after the establishment of the Commonwealth." [Section 88, p. 33.]

"On the imposition of uniform duties of customs the power of the Parliament to impose duties of customs and of excise, and to grant bounties on the production or export of goods, shall become exclusive."

"On the imposition of uniform duties of customs all laws of the several States imposing duties of customs or of excise, or offering bounties on the production or export of goods, shall cease to have effect, but any grant of or agreement for any such bounty lawfully made by or under the authority of the Government of any State shall be taken to be good if made before the thirtieth day of June, one thousand eight hundred and ninety-eight, and not otherwise." [Section 90, p. 33.]

"Nothing in this Constitution prohibits a State from granting any aid to or bounty on mining for gold, silver, or other metals, nor from granting, with the consent of both Houses of the Parliament of the Commonwealth expressed by resolution, any aid to or bounty on the production or export of goods." [Section 91, p. 33.]

"On the imposition of uniform duties of customs, trade, commerce, and intercourse among the States, whether by means of internal carriage or ocean navigation, shall be absolutely free." [Section 92, 1st paragraph, p. 33.]

"The power of the Parliament to make laws with respect to trade and commerce extends to navigation and shipping, and to railways the property of any State." [Section 98, p. 34.]

"The Commonwealth shall not, by any law or regulation of trade, commerce, or revenue, give preference to one State or any part thereof over another State or any part thereof." [Section 99, p. 34.]

"The Commonwealth shall not, by any law or regulation of trade or commerce, abridge the right of a State or of the residents therein to the reasonable use of the waters of rivers for conservation or irrigation." [Section 100, p. 34.]

"There shall be an Interstate Commission, with such powers of adjudication and administration as the Parliament deems necessary, for the execution and maintenance, within the Commonwealth, of the provisions of this Constitution relating to trade and commerce, and of all laws made thereunder." [Section 101, p. 34.]

"The Parliament may by any law with respect to trade or commerce forbid, as to railways, any preference or discrimination by any State, or by any authority constituted under a State, if such preference or discrimination is undue and unreasonable or unjust to any State; due regard being had to the financial responsibilities incurred by any State in connection with the construction and maintenance of its railways. But no preference or discrimination shall, within the meaning of this section, be taken to be undue and unreasonable, or unjust to any State, unless so adjudged by the Interstate Commission." [Section 102, p. 34.]

"The members of the Interstate Commission—

(i.) Shall be appointed by the Governor-General in Council;

(ii.) Shall hold office for seven years, but may be removed within that time by the Governor-General in Council, on an address from both Houses of the Parliament in the same session praying for such removal on the ground of proved misbehaviour or incapacity;

(iii.) Shall receive such remuneration as the Parliament may fix; but such remuneration shall not be diminished during their continuance in office." [Section 103, p. 35.]

"Nothing in this Constitution shall render unlawful any rate for the carriage of goods upon a railway, the property of a State, if such rate is deemed by the Interstate Commission to be necessary for the development of the territory of the State, and if the rate applies equally to goods within the State and to goods passing into the State from other States." [Section 104, p. 35.]

Provisions of a temporary nature and which have now ceased to operate were also made as follows:—

"But notwithstanding anything in this Constitution, goods imported before the imposition of uniform duties of customs into any State, or into any colony which, whilst the goods remain therein, becomes a State, shall, on thence passing into another State within two years after the imposition of such duties, be liable to any duty chargeable on the importation of such goods into the Commonwealth, less any duty paid in respect of the goods on their importation." [Section 92, 2nd paragraph, p. 33.]

"Notwithstanding anything in this Constitution, the Parliament of the State of Western Australia, if that State be an original State, may, during the first five years after the imposition of uniform duties of customs, impose duties of customs on goods passing into that State and not originally imported from beyond the limits of the Commonwealth; and such duties shall be collected by the Commonwealth."

"But any duty so imposed on any goods shall not exceed during the first of such years the duty chargeable on the goods under the law of Western Australia in force at the imposition of uniform duties, and shall not exceed during the second, third, fourth, and fifth of such years respectively, four-fifths, three-fifths, two-fifths, and one-fifth of such latter duty, and all duties imposed under this section shall cease at the expiration of the fifth year after the imposition of uniform duties."

"If at any time during the five years the duty on any goods under this section is higher than the duty imposed by the Commonwealth on the importation of the like goods, then such higher duty shall be collected on the goods when imported into Western Australia from beyond the limits of the Commonwealth." [Section 95, p. 34.]

§ 2. Commonwealth Commercial Legislation.

1. **Customs Act, 1901 (No. 6 of 1901).**—"An Act relating to the Customs," assented to on the 3rd October, 1901, came into operation by proclamation on the 4th October, 1901. This provided for the establishment of the necessary administrative machinery for all matters pertaining to the customs, and prescribed, *inter alia*, the manner in which customs duties shall be computed and paid. It does not however determine the rates thereof.

During the interval between the inception of the Commonwealth, viz., on 1st January, 1901, and the coming into operation of the Customs Act 1901, the Customs Acts of the several States were administered by the Executive Government of the Commonwealth, under section 86 of the Constitution. *Vide* p. 33 herein.

2. **Customs Tariff Act, 1902 (No. 14 of 1902).**—The first Commonwealth Customs Tariff imposing uniform rates of customs duty in all the States was introduced in the House of Representatives on the 8th October, 1901. "An Act relating to Duties of Customs," assented to on the 16th September, 1902, made provision that uniform duties of customs specified in the tariff schedule should be imposed from the 8th October, 1901, at four o'clock in the afternoon, reckoned according to the standard time in force in the State of Victoria. From this time onwards trade between the States became free, with, however, the exception, under section 95 of the Constitution Act—p. 34 herein,— of the right of Western Australia to levy duty on the goods from other States.

3. **Sea Carriage of Goods Act (No. 14 of 1904).**—"An Act relating to the Sea Carriage of Goods," assented to on the 15th December, 1904, to commence on the 1st January, 1905, provides that—" Where any bill of lading or document contains any clause, covenant or agreement whereby (*a*) the owner, charterer, master, or agent of any ship or the ship itself, is relieved from the liability for loss or damage to goods arising from the harmful or improper condition of the ship's hold, or any other part of the ship in which goods are carried, or arising from negligence, fault, or failure in the proper loading, stowage, custody, care, or delivery of goods received by them or any of them to be carried in or by the ship; or (*b*) any obligations of the owner or charterer of any ship to exercise due diligence and to properly man, equip, and supply the ship, to make and keep the ship seaworthy, and to make and keep the ship's hold, refrigerating and cool chambers, and all other parts of the ship in which goods are carried, fit and safe for their reception, carriage, and preservation, are in any wise lessened, weakened, or avoided; or (*c*) the obligations of the master, officers, agents, or servants of any ship to carefully handle and stow goods, and to care for, preserve, and properly deliver them, are in any wise lessened, weakened, or avoided; that clause, covenant, or agreement shall be illegal, null and void, and of no effect."

"In every bill of lading with respect to goods a warranty shall be implied that the ship shall be, at the beginning of the voyage, seaworthy in all respects and properly manned, equipped, and supplied."

"In every bill of lading with respect to goods, unless the contrary intention appears, a clause shall be implied whereby, if the ship is at the beginning of the voyage seaworthy in all respects and properly manned, equipped, and supplied, neither the ship nor her owner, master, agent, or charterer shall be responsible for damage to or loss of the goods resulting from (*a*) faults or errors in navigation; or (*b*) perils of the sea or navigable waters; or (*c*) acts of God or the King's enemies; or (*d*) the inherent defect, quality, or vice of the goods; or (*e*) the insufficiency of package of the goods; or (*f*) the seizure of the goods under legal process; or (*g*) any act of omission of the shipper or owner of the goods, his agent, or representative; or (*h*) saving or attempting to save life or property at sea; or (*i*) any deviation in saving or attempting to save life or property at sea."

4. **Secret Commission Act, 1905 (No. 10 of 1905).**—"An Act relating to Secret Commissions, Rebates, and Profits," assented to on the 16th November, 1905, provides that—"Any person who, without the full knowledge and consent of the principal, directly or indirectly, (*a*) being an agent of the principal, accepts or obtains, or agrees or offers to accept or obtain, for any person, for himself, or for any person other than the principal; or (*b*) gives or agrees to give or offers to the agent of a principal, or to any person at the request of an agent of the principal, any gift or consideration as an inducement or reward for any act done or to be done, or any forbearance observed or to be observed, or any favour or disfavour shewn or to be shewn in relation to the principal's affairs or business, or on the principal's behalf, or for obtaining or having obtained, or aiding or having aided to obtain for any person an agency or contract for or with the principal, shall be guilty of an indictable offence."

"Any person who (*a*) gives to an agent; or (*b*) being an agent receives or uses, with intent to deceive the principal, any receipt, account, or document in respect of which the principal is interested, or in relation to a dealing, transaction, or matter in which the principal is interested, the receipt, account, or document being false, erroneous, or defective in any material particular, or likely in any way to mislead the principal, shall be guilty of an indictable offence."

"Any agent who, without the full knowledge and consent of the principal, buys from or sells to himself, or any firm of which he is a partner, or any company of which he is a director, manager, officer, or employé, or in which he or any person for him or on his behalf is a shareholder, any goods for or on behalf of his principal, shall be guilty of an indictable offence."

"Whoever aids, abets, counsels, or procures, or is in any way directly or indirectly knowingly concerned in or privy to (*a*) the commission of any offence against this Act; or (*b*) the commission outside Australia of any Act, in relation to the affairs or business or on behalf of a principal residing in Australia, which, if committed in Australia, would be an offence against this Act, shall be deemed to have committed the offence and be punishable accordingly."

"This Act applies to trade and commerce with other countries and among the States, and to agencies of and contracts with the Commonwealth or any department or officer thereof."

5. **Commerce (Trade Descriptions) Act, 1905 (No. 16 of 1905).**—" An Act relating to Commerce with Other Countries," assented to on the 8th December, 1905, and brought into operation by proclamation on the 8th June, 1906, gives power to compel the placing of a proper description of certain prescribed goods, or on packages containing the same, being imports or exports of the Commonwealth. In this Act, unless the contrary intention appears "trade description" in relation to any goods, means any description, statement, indication, or suggestion, direct or indirect " (*a*) as to the nature, number, quantity, quality, purity, class, grade, measure, gauge, size, or weight of the goods; or (*b*) as to the country or place in or at which the goods were made or produced; or (*c*) as to the manufacturer or producer of the goods or the person by whom they were selected, packed, or in any way prepared for the market; or (*d*) as to the mode of manufacturing, producing, selecting, packing, or otherwise preparing the goods; or (*e*) as to the material or ingredients of which the goods are composed, or from which they are derived; or (*f*) as to the goods being the subject of an existing patent privilege, or copyright, and includes a customs entry relating to goods; and any mark which, according to the custom of the trade or common repute, is commonly taken to be an indication of any of the above matters shall be deemed to be a trade description within the meaning of this Act."

"'False trade description' means a trade description which, by reason of anything contained therein or omitted therefrom, is false or likely to mislead in a material respect as regards the goods to which it is applied, and includes every alteration of a trade description, whether by way of addition, effacement, or otherwise, which makes the description false or likely to mislead in a material respect."

"The goods prescribed are:—(*a*) Articles used for food or drink by man, or used in the manufacture or preparation of articles used for food or drink by man; or (*b*) medicines or medicinal preparations for internal or external use; or (*c*) manures; or (*d*) apparel (including boots and shoes), and the materials from which such apparel is manufactured; or (*e*) jewellery; or (*f*) seeds and plants.

6. **Australian Industries Preservation Act, 1906 (No. 9 of 1906).**—"An Act for the Preservation of Australian Industries and for the Repression of Destructive Monopolies," assented to 24th September, 1906, provides that any person or any corporation making or engaging or continuing in any combination "with intent to restrain trade or commerce to the detriment of the public or with intent to destroy or injure by means of unfair competition any Australian industry the preservation of which is advantageous to the Commonwealth, having due regard to the interests of the producers, workers, or consumers," or any person or corporation monopolising or attempting or conspiring to monopolise any part of the trade of the Commonwealth with intent to control, to the detriment of the public, the supply or price of any service, merchandise, or commodity, is guilty of an offence.

7. **Customs Tariff 1906 (No. 14 of 1906).**—"An Act relating to Duties of Customs" amends the Customs Tariff of 1902 in relation to the duties on harvesters and agricultural implements and machinery and prescribes the prices to be the maximum prices of Australian harvesters and drills delivered to the purchaser at the railway station or port nearest to the factory where they are made.

8. **Customs Tariff (South African Preference) 1906 (No. 17 of 1906).**—"An Act relating to Preferential Duties of Customs on certain goods the produce or manufacture of the British Colonies or Protectorates in South Africa which are included within the South African Customs Union," assented to 12th October, 1906, to operate from 1st October, 1906, provides for special preferential rates of duty on certain goods imported from and being the produce of any of the Colonies or Protectorates included within the South African Customs Union.

§ 3. Method of Recording Imports and Exports.

1. **Value of Imports.**—The recorded value of goods imported from countries beyond the Commonwealth represents the amount on which duty is payable or would be payable if the duty were charged *ad valorem*. The value of goods subject to duty is taken to be 10 per cent. in advance of the fair market value in the principal markets of the country whence the goods were exported, the increase being roughly intended to represent the cost plus insurance, freight, and other charges to the place of landing.

2. **Value of Exports.**—The recorded value of goods exported is taken to represent the value in the principal markets of the Commonwealth in the ordinary commercial acceptation of the term.

3. **Records of Past Years.**—In the years preceding federation each State independently recorded its trade, and in so doing did not distinguish other Australian States from

foreign countries. As the aggregation of the records of the several States is, necessarily, the only available means of ascertaining the trade of Australia for comparison with later years, it is unfortunate that past records of values and the direction of imports were not on uniform lines admitting of the preparation of a record for Australia as a whole. On the introduction of the Customs Act, 1901, the methods of recording values were made uniform throughout the States, but it was not until September, 1903, that a fundamental defect in the system of recording transhipped goods was remedied. Up to this date goods arriving in any Australian port for transhipment to a port in another Australian State were recorded at the latter port only, where they were ordinarily recorded as from the transhipping State, and not as an import from the oversea country.

In recording exports an analogous defect also existed in most of the States, since goods despatched from one Australian State for transhipment in another State to an oversea country were simply recorded in the former as an export to the transhipping State; thus no proper record of the export as oversea was made. Owing to this defect the oversea trade prior to September, 1903, is understated by an amount which it is impossible to accurately estimate, since it varies with the development of the shipping facilities of the States concerned. To discover the direction of the transhipped trade is not possible. The figures presented in the tables hereinafter are therefore the values as recorded, and must be taken as subject to the defects explained.

4. **Vessels (Ships) Imported and Exported.**—The imports or exports of vessels were not recorded prior to the year 1905. The value of vessels imported during the years 1905 and 1906 was, respectively, £265,957 and £366,300, while the exports for the same years were respectively £79,975 and £51,365.

5. **Ships' Stores.**—Prior to 1906 goods shipped in Australian ports on board oversea ships as ships' stores were included in the general exports. During 1906 ships' stores were specially recorded as such, and omitted from the return of exports. The value of ships' stores during 1906 amounted to £875,966, of which bunker coal represented £575,471 or 65.7 per cent.

§ 4. Oversea Trade.

1. **Total Oversea Trade.**—The oversea trade of the Commonwealth during 1906, both as regards imports and exports, is by far the greatest yet recorded. The statement hereunder of the oversea trade of Australia during the past twenty years shews that from a total of £56,000,000 in 1886, equal to £20 7s. 8d. per inhabitant, the trade grew by somewhat irregular movements, until in 1891 it amounted to £73,753,603 or £23 1s. 6d. per head. The year 1892 marked the beginning of a period of acute financial stress culminating in the commercial crisis of 1893. The collapse of these years, confined by no means to Australia, but affecting in varying degree many countries, is plainly reflected in the records of the trade of that period, for the trade for 1894 had fallen to £54,028,227, a decline of no less than 26.75 per cent. in three years. In 1895 there was slight recovery, and a continuous upward movement until 1901, when the trade reached £92,130,183, or £24 5s. 10d. per head. A decline, due to drought, in the exports of agricultural, pastoral and dairy produce, reduced the trade of 1902 to £84,591,037, but although in the next year there was a further shrinkage in the exports of agricultural produce, the increase in the value of the exports of metals, specie, butter and wool was so large as to effect an increase in the total trade. From 1902 the increase has been continuous, reaching in 1906 the amount of £114,482,675, equal to £28 0s. 5d. per inhabitant.

The "balance of trade" is shewn in a table hereinafter :—

OVERSEA TRADE OF AUSTRALIA, 1886 TO 1906.

Year.	Recorded Value.			Value per Inhabitant.[1]								
	Imports.	Exports.	Total Trade.	Imports.			Exports.			Total Trade.		
	£	£	£	£	s.	d.	£	s.	d.	£	s.	d.
1886	34,178,743	21,720,383	55,879,126	12	9	4	7	18	4	20	7	8
1887	29,572,497	23,420,876	52,993,373	10	8	8	8	5	3	18	13	11
1888	36,880,967	28,900,008	65,780,975	12	11	7	9	17	2	22	8	9
1889	37,577,218	29,552,999	67,130,217	12	8	8	9	15	7	22	4	3
1890	35,168,171	29,321,331	64,489,502	11	6	4	9	8	9	20	15	1
1891	37,711,053	36,042,550	73,753,603	11	16	0	11	5	6	23	1	6
1892	30,107,339	33,370,284	63,477,623	9	4	0	10	3	10	19	7	10
1893	23,765,085	33,225,265	56,990,350	7	2	7	9	19	4	17	1	11
1894	21,897,114	32,131,113	54,028,227	6	9	0	9	9	4	15	18	4
1895	23,195,101	33,644,332	56,839,433	6	14	1	9	14	6	16	8	7
1896	29,658,197	32,963,522	62,621,719	8	8	5	9	7	2	17	15	7
1897	31,958,126	37,782,593	69,740,719	8	18	3	10	10	9	19	9	0
1898	31,481,144	40,164,606	71,645,750	8	12	11	11	0	7	19	13	6
1899	34,329,687	48,599,033	82,928,720	9	6	0	13	3	5	22	9	5
1900	41,388,030	45,956,882	87,344,912	11	1	3	12	5	9	23	7	0
1901	42,434,011	49,696,172	92,130,183	11	3	9	13	2	1	24	5	10
1902	40,675,950	43,915,087	84,591,037	10	10	11	11	7	10	21	18	9
1903	37,811,471	48,250,112	86,061,583	9	13	10	12	7	4	22	1	2
1904	37,020,842	57,485,915	94,506,757	9	7	3	14	10	9	23	18	0
1905	38,346,731	56,841,035	95,187,766	9	10	11	14	3	0	23	13	11
1906	44,744,912	69,737,763	114,482,675	10	19	0	17	1	5	28	0	5

[1] Reckoned on mean population for year.

2. Ratio between Exports and Imports.—A striking feature in the trade returns of the past twenty years is the rapid growth of the value of exports as compared with that of imports. The increase in the value of imports from 1886 to 1906 is equivalent to an annual rate of 1.36 per cent., whereas the exports during the same period shew an increased value equal to 6.01 per cent. per annum, the annual rate of increase of the total trade being 3.65 per cent. During the earlier years the balance of trade was on the side of imports, but from the year 1892 the reverse has been the case. The excess of exports mainly represents the interest and profits on investments of British and foreign capital in Australia, in the form of Government loans and private undertakings, and also freight on trade which is so largely carried by British and foreign ships.

The following table, shewing the balance of trade and the percentage of exports on imports from 1886 to 1906, both inclusive, though subject to the defect of record which has just been explained, is probably substantially correct, since the unascertainable true ratio will doubtless be very near the figure given :—

BALANCE OF TRADE OF AUSTRALIA AND PERCENTAGE OF EXPORTS ON IMPORTS, 1886 TO 1906.

Year.	Balance of Trade	Percentage	Year.	Balance of Trade	Percentage	Year.	Balance of Trade	Percentage
	£			£			£	
1886	[1]—12,478,360	63.5	1893	9,460,180	139.8	1900	4,568,852	111.0
1887	—6,151,621	79.2	1894	10,233,999	146.7	1901	7,262,161	117.1
1888	—7,930,959	78.4	1895	10,449,231	145.0	1902	3,239,137	108.0
1889	—8,024,219	78.6	1896	3,305,325	111.1	1903	10,438,641	127.6
1890	—5,846,840	83.4	1897	5,824,467	118.2	1904	20,465,073	155.3
1891	—1,668,503	95.6	1898	8,683,462	127.6	1905	18,494,304	148.2
1892	3,262,945	110.8	1899	14,269,346	141.6	1906	24,992,851	155.9

[1] The sign (—) denotes that the value of the exports is less than the value of the imports.

§ 5. Direction of Trade.

1. **Countries of Origin of Imports.**—From the 1st January, 1905, the Trade and Customs Department, in addition to the usual record of the countries whence goods directly arrived in Australia, has kept a record of the countries of their origin. The following table shews, for the years 1905 and 1906, the value of imports recorded as direct from the principal countries, and also the disposition of the value of imports against the countries where they were produced or manufactured:—

IMPORTS FROM COUNTRIES OF SHIPMENT AND COUNTRIES OF ORIGIN, 1905 AND 1906.

Country.	Imports according to							
	Country of Shipment.				Country of Origin.			
	1905.		1906.		1905.		1906.	
	Value.	Per cent.	Value.	Per cent.	Value.	Per cent.	Value.	Per cent.
	£		£		£		£	
United Kingdom	23,074,717	60.17	26,575,833	59.42	20,319,815	52.99	22,904,344	51.21
British Possessions—								
Canada	230,981	0.60	303,751	0.68	379,125	0.99	305,497	0.68
Ceylon	693,616	1.81	643,906	1.44	666,181	1.74	620,524	1.39
Hong Kong	277,038	0.72	230,311	0.51	3,350	0.01	6,209	0.01
India	1,311,427	3.42	1,703,606	3.81	1,352,105	3.52	1,720,343	3.85
New Zealand	2,333,516	6.09	3,156,489	7.06	2,277,152	5.94	2,988,776	6.68
Straits Settlements	222,276	0.58	253,607	0.57	104,104	0.27	136,849	0.31
Other British Possessions ...	315,296	0.82	444,194	0.99	422,970	1.10	691,211	1.54
Total British Possessions ...	5,384,150	14.04	6,735,864	15.06	5,204,987	13.57	6,469,409	14.46
Total British Countries ...	28,458,867	74.21	33,311,697	74.48	25,524,802	66.56	29,373,753	65.67
Foreign Countries—								
Austria	11,333	0.03	8,828	0.02	81,553	0.21	109,014	0.24
Belgium	551,984	1.44	909,620	2.03	252,329	0.66	446,251	1.00
China	69,349	0.18	58,338	0.13	318,701	0.83	271,295	0.61
France	510,950	1.33	462,622	1.03	1,343,753	3.50	1,473,367	3.29
Germany	2,643,412	6.89	3,204,844	7.17	3,026,850	7.89	3,929,116	8.78
Japan	371,761	0.97	422,552	0.94	397,321	1.04	450,898	1.01
Netherlands	132,327	0.35	151,638	0.34	244,255	0.64	228,896	0.51
Norway and Sweden	302,397	0.79	359,588	0.80	524,694	1.37	619,743	1.39
Spain	15,738	0.04	21,568	0.05	82,627	0.22	104,827	0.23
Switzerland	22,826	0.06	27,085	0.06	389,294	1.02	474,804	1.06
United States	4,486,604	11.70	4,633,553	10.36	5,006,337	13.05	5,605,612	12.54
Other Foreign Countries ...	769,183	2.01	1,157,573	2.59	1,155,165	3.01	1,641,985	3.67
Total Foreign Countries ...	9,887,864	25.79	11,417,809	25.52	12,821,929	33.44	15,355,753	34.33
Total Imports from all Countries	38,346,731	100	44,729,506	100	38,346,731	100	44,729,506	100

The only country from which the value of direct imports exceeds by any large amount the value of the imports of goods which were manufactured or produced therein, that is to say, the only country which shews a balance of any magnitude as a distributor of the goods of other countries to Australia, is the United Kingdom. The records of our imports therefrom during the year 1906 shew that while the total direct imports from that country amounted to £26,575,833, the value of the manufactures or produce of the United Kingdom itself, imported from all countries whatsoever during the same year, was £22,904,344. From the foregoing figures it appears that goods to the value of *at least* £3,671,489 were received from other countries through the United Kingdom.

Other countries which shew balances as distributors to Australia, though absolutely of much less amount, are Belgium, Ceylon, Hong Kong, New Zealand, and Straits Settlements. The countries mentioned are, of course, not the only countries through which goods are indirectly imported into Australia, for the direct imports from other countries, notably France and Germany, include considerable values which are not of the produce of those countries. These values, however, are more than balanced by value of French and German goods received through the United Kingdom and other countries.

2. **Direct Imports according to Country of Shipment.**—The following table, shewing the average yearly value of imports from each of the principal countries during each succeeding quinquennial period from 1887 to 1906, and for the year 1906, shews considerable change in direction of imports during the past twenty years. The countries mentioned in this table are those where the goods were shipped or whence they were directly consigned to Australia:—

TRADE WITH VARIOUS COUNTRIES, 1887 TO 1906.

IMPORTS (INCLUDING BULLION AND SPECIE).

Country.	Yearly Average of Quinquennial Periods.				Year 1906.
	1887-91.	1892-6.	1897-1901.	1902-6.	
	£	£	£	£	£
United Kingdom	24,818,787	18,241,366	22,794,700	23,163,660	26,575,833
British Possessions—					
Canada	95,592	89,861	230,459	291,253	303,751
Cape Colony	3,090	11,364	3,858	7,105	8,762
Ceylon	124,057	239,774	410,057	603,660	643,906
Fiji	170,100	92,125	104,459	79,820	57,181
Hong Kong	769,699	460,883	313,578	303,322	230,311
India	745,070	606,181	914,859	1,148,895	1,703,606
Mauritius	483,283	178,074	175,966	104,911	65,733
Natal	10,893	4,655	114	2,429	8,035
New Guinea	12,166	16,623	52,416	67,987	64,073
New Zealand	1,826,537	1,100,533	1,541,128	2,479,298	3,156,489
Straits Settlements ...	126,691	138,055	281,022	178,658	269,013
Other British Possessions	22,605	15,718	34,247	136,443	240,410
Total British Possessions ...	4,389,783	2,953,846	4,062,163	5,403,781	6,751,270
Total British Countries ...	29,208,570	21,195,212	26,856,863	28,567,441	33,327,103
Foreign Countries—					
Argentine Republic ...	336	101	3,264	229,872	724
Belgium	227,995	274,559	394,094	559,880	909,620
Chile and Peru ...	19,419	2,511	32,128	16,112	36,103
China	800,454	327,120	262,195	135,219	58,338
France	360,000	201,284	476,756	465,330	462,622
Germany	1,286,054	1,107,496	2,254,746	2,708,806	3,204,844
Hawaiian Islands, New Britain, New Caledonia, New Hebrides, and South Sea Islands ...	109,862	78,286	150,510	140,294	187,090
Italy	31,650	67,672	137,852	168,221	185,247
Japan	39,787	63,195	225,086	380,388	424,583
Java	424,173	464,351	461,748	510,689	497,815
Netherlands	19,940	12,125	36,919	101,531	151,638
Norway and Sweden ...	522,102	176,149	381,213	373,274	359,588
Philippine Islands ...	13,350	15,869	69,385	70,669	89,840
United States of America	2,268,620	1,682,092	4,355,724	5,014,408	4,633,553
Other Foreign Countries	49,669	56,545	219,717	282,847	216,264
Total Foreign Countries ...	6,173,411	4,529,355	9,461,337	11,152,540	11,417,809
Total	35,381,981	25,724,567	36,318,200	39,719,981	44,744,912

Expressing each item as percentage on the total of the imports, the following results are obtained, viz:—

IMPORTS.—PERCENTAGES OF THE IMPORTS FROM EACH COUNTRY ON THE TOTAL IMPORTS 1887 TO 1906.

Country.	1887-91.	1892-6.	1897-1901.	1902-6.	1906.
	per cent.	per cent.	per cent.	per cent.	per cent.
United Kingdom	70.14	70.92	62.77	58.30	59.39
BRITISH POSSESSIONS—					
Canada	0.27	0.35	0.64	0.73	0.68
Cape Colony	0.01	0.04	0.01	0.02	0.02
Ceylon	0.35	0.93	1.13	1.52	1.44
Fiji	0.48	0.36	0.29	0.20	0.13
Hong Kong	2.18	1.79	0.86	0.76	0.52
India	2.11	2.36	2.52	2.89	3.81
Mauritius	1.37	0.69	0.49	0.27	0.15
Natal	0.03	0.02	...	0.01	0.02
New Guinea	0.03	0.06	0.14	0.17	0.14
New Zealand	5.16	4.28	4.24	6.24	7.05
Straits Settlements...	0.36	0.54	0.77	0.45	0.60
Other British Possessions	0.06	0.06	0.09	0.34	0.53
Total British Possessions ...	12.41	11.48	11.18	13.60	15.09
Total British Countries	82.55	82.40	73.95	71.90	74.48
FOREIGN COUNTRIES—					
Argentine Republic...	...	...	0.01	0.58	...
Belgium	0.64	1.07	1.09	1.41	2.03
Chile and Peru	0.06	0.01	0.09	0.04	0.08
China	2.26	1.27	0.72	0.34	0.13
France	1.02	0.78	1.31	1.17	1.04
Germany	3.68	4.31	6.21	6.81	7.16
Hawaiian Islands, New Britain, New Caledonia, New Hebrides and South Sea Islands	0.31	0.30	0.41	0.36	0.42
Italy	0.09	0.26	0.38	0.42	0.41
Japan	0.11	0.25	0.62	0.96	0.95
Java	1.20	1.80	1.27	1.29	1.11
Netherlands	0.06	0.05	0.10	0.26	0.34
Norway and Sweden	1.48	0.68	1.05	0.94	0.80
Philippine Islands	0.04	0.06	0.19	0.18	0.20
United States of America	6.41	6.54	12.00	12.62	10.36
Other Foreign Countries	0.14	0.22	0.60	0.72	0.49
Total Foreign Countries... ...	17.45	17.60	26.05	28.10	25.52
Total	100	100	100	100	100

3. **Imports Shipped from the United Kingdom.**—The foregoing table shews that while the value of direct imports from the United Kingdom during 1906 is above the yearly average of the period under review, the proportion to total imports has diminished, having fallen from 70.14 per cent. during the years 1887-91 to 59.39 per cent. in 1906. The apparent diversion of Australian trade from Great Britain is more fully dealt with hereinafter, viz., in paragraph 10 of this section. The values of the principal imports from the United Kingdom during the year 1906 are as follows:—

Ale and beer, £336,729 ; alkalies (soda), £97,003 ; apparel and textiles, £10,981,683 ; arms, ammunition and explosives, £581,428 ; books and periodicals, £421,709 ; brushware, £107,477 ; earthenware, etc., £167,446 ; clocks and watches, £104,684 ; cocoa and chocolate, £176,843 ; confectionery, £100,860 ; copper, £71,794 ; cordage, metal, £85,191 ; cordage, other, £87,196 ; cutlery, £116,237 ; drugs and chemicals, £592,595 ; electrical materials, £188,292 ; fancy goods, £158,012 ; fish, fresh and preserved, £143,837 ; furniture, £102,063 ; glass and glassware, £96,773 ; indiarubber manufactures, £290,926 ; instruments, musical, £73,954 ; instruments, scientific, £180,733 ; iron and steel, £1,766,885 ; jewellery and precious stones, £411,774 ; leather and leather manufactures, £293,156 ; machines and machinery, £1,191,521 ; machine tools, £61,353 ; manures, £114,255 ; metals, manufactures of, £1,692,609 ; milk, preserved, £98,959 ; oils, £197,579 ; paints and colours, £244,804 ; paper, £515,461 ; pickles, sauces, etc., £88,977 ; platedware, £148,339 ; railway materials, £134,848 ; soap, £52,331 ; spirits, £683,166 ; stationery, £248,268 ; tin plates, £256,927 ; tobacco, £188,411 ; tools of trade, £181,115 ; varnishes, £55,782 ; vehicles, £302,048 ; vessels (ships), £358,000.

4. **Imports Shipped from British Possessions.**—The growth of the value of imports from other British possessions during the past twenty years has been such as to increase the proportion to total imports from 12.41 per cent. in the years 1887-91 to 15.09 per cent. in 1906. Of the total imports from British possessions during 1906, 46.75 per cent. were from New Zealand, 25.24 per cent. from India, and 9.54 per cent. from Ceylon.

5. **Principal Imports from British Possessions, 1906.**—These are as follows:—

(i.) *Canada.* Apparel and textiles, £24,123 ; boots and shoes, £8721 ; drugs and chemicals, £22,871 ; fish, £39,965 ; agricultural implements and machinery, £38,375 ; other machines and machinery, £38,299 ; medicines, £17,336 ; paper, £16,855 ; timber, £44,116 ; vehicles, £11,973.

The imports from Canada include manufactures of the United States—machinery, medicines and timber—to the value of about £70,000, while on the other hand a corresponding amount of Canadian produce—paper, £45,000, and implements and machinery, £25,000—is received into Australia from other countries, mainly from the United Kingdom and from the United States.

(ii.) *Ceylon.* Coffee and chicory, £9120 ; nuts, £11,883 ; tea, £592,152. The large increase in the imports from Ceylon—from £124,057 during the years 1887-91, to £643,906 in 1906—is due to the displacement of China teas in the Australian markets by those of India and Ceylon. Of the total imports of tea during the year 1906, 66.67 per cent. was the produce of Ceylon.

(iii.) *Fiji.* Bananas, £36,891 ; Sugar, £10,693.

(iv.) *Hong Kong.* Apparel and textiles, £19,116 ; rice, £53,833 ; oils, £16,867 ; tea, £35,440. The imports from Hong Kong are mainly the produce of China.

(v.) *India.* Apparel and textiles, £10,083 ; bags and sacks, £1,102,852 ; canvas, £124,420 ; coffee and chicory, £13,538 ; cotton, raw, £12,082 ; rice, £10,591 ; shellac, £11,065 ; manures, £20,405 ; oils, £47,826 ; skins and hides, £20,978 ; spices, £10,720 ; tea, £220,520 ; wax, paraffin, £14,703.

(vi.) *Mauritius.* Sugar, £65,568.

(vii.) *Natal.* Coal, £6215 ; seeds (canary, hemp, and rape), £1490.

(viii.) *New Guinea.* Copra, £6159 ; gold, bullion and ore, £50,863.

(ix.) *New Zealand.* Horses, £22,946; sheep, £45,985; military stores, £23,438: coal, £6653; copra, £18,872; cordage and twines, £6468; fibre, £77,812; fish, £21,117; gold, bullion, ore, and specie, £2,114,633; grain—barley, £10,873; oats, £26,623; hops, £18,775; implements and machinery (agricultural), £6514; machines and machinery, £21,019; meats, £20,213; milk, preserved, £7326; seeds, £38,451; silver, bullion, ore, and specie, £81,948; skins and hides, £195,048; timber, £316,360.

(x.) *Straits Settlements.* Rice, £44,742; oils, £61,537; spices, £35,970; tapioca, £40,935; wax, paraffin, £13,818; wood and wicker manufactures, £10,339. The rice imported from the Straits Settlements is largely the produce of Burma, and the oils of Borneo and Sumatra.

6. **Imports from Foreign Countries.**—The imports from foreign countries during the year 1906 represented 25.52 per cent. of the total imports as compared with 17.45 per cent. during the years 1887-91. Compared, however, with the average of the past ten years, the proportion during the year 1906 shews a slight decline.

7. **Principal Imports from Foreign Countries.**—The details are as follows:—

(i.) *Argentine Republic.* The imports from the Argentine Republic are almost entirely of grain and fodder, and were abnormally large in the years 1902 and 1903 in consequence of the failure of crops in Australia in these years.

(ii.) *Belgium.* Apparel and textiles, £70,373: candles, £14,759; drugs and chemicals, £15,882; glass and glassware, £74,292; iron and steel, £112,848; jewellery, £17,253; leather, £13,657; machines and machinery, £36,164; manures, £35,330; matches and vestas, £28,303; metal manufactures, £122,644; paper, £30,502; railway materials, £100,500; motors, £32,009; wine, £37,966.

A large proportion of the iron, steel and metal manufactures, and of the manures from Belgium, is of German origin. The motors are almost entirely of French manufacture, and the candles are of Dutch manufacture.

(iii.) *Chile.* Alkali (soda), £35,943.

(iv.) *China.* Apparel and textiles, £9826; rice, £10,659; tea, £19,869.

The decline of the value of imports from China during the past twenty years is due to the loss of the tea trade, which now draws its supplies mainly from India and Ceylon.

(v.) *France.* Apparel and textiles, £57,167; corks, £11,518; drugs and chemicals, £114,573; fruits, £16,369; preserved milk, £56,635; spirits, £49,096; tiles, £11,472; cigars and cigarettes, £9295; wine, £21,974.

The value of the direct imports recorded from France is much below the value of imports of goods of French origin. The most important imports of French origin are—apparel and textiles, £743,000; cream of tartar, £115,833; leather, £26,339; pipes, smoking, £34,056; spirits, £163,172; wines, £35,198; vehicles, motors, £46,627.

(vi.) *Germany.* Ale and beer, £16,208; apparel and textiles, £417,758; arms, ammunition, and explosives, £33,554; brushware, £18,288; cement, £41,892; chinaware, etc., £71,932; cocoa and chocolate, £22,892; cutlery, £14,562; drugs and chemicals, £140,684; furniture, £63,226; glass and glassware, £109,624; hops, £10,210; india-rubber manufactures, £33,058; musical instruments, £226,754; iron and steel, £81,083; jewellery, £33,897; lamps and lampware, £33,072; leather and leather manufactures, £29,655; machines and machinery, £202,517; manures, £32,990; matches and vestas, £40,335; metal manufactures, £562,324; paper, £209,953; railway material, £30,521; spirits, £57,121; stationery, £43,106; tobacco, £48,712.

The imports from Germany, as stated in the foregoing list, include considerable amounts of the produce and manufacture of other countries, but on the other hand still larger amounts of German goods are received into the Commonwealth from other countries.

(vii.) *Italy.* Apparel and textiles, £39,258; fruits, £31,083; matches and vestas, £17,901; marble, £14,569; sulphur, £13,500.

(viii.) *Japan.* Apparel and textiles, £224,255; bags, baskets, etc., £12,544; chinaware and earthenware, £10,551; fancy goods, £11,147; furniture, £13,919; rice, £32,140; oils, £11,176; sulphur, £45,575.

(ix.) *Java.* Cotton, raw, £8800; rice, £53,927; oil, kerosene, £51,175; sugar, £357,809; tea, £9271.

(x.) *Netherlands.* Apparel and textiles, £10,000; cocoa and chocolate, £22,307; cameos and precious stones, £16,847; manures, £12,116; spirits, £54,323. The value of the imports of Netherlands manufacture from all countries of cocoa and chocolate amounted to £45,854, and of spirits, to £99,768.

(xi.) *Norway.* Fish, preserved, £9830; milk, preserved, £8459; timber, £280,535. The value of the total imports from all countries of preserved milk of Norwegian origin amounted to £76,587, and of preserved fish, to £22,082.

(xii.) *Switzerland.* Apparel and textiles, £22,822; milk, £2299. The value of imports recorded as direct from Switzerland amounts to only 5.70 per cent. of the value of the total imports of the produce of that country. The principal articles of Swiss production imported were:—Apparel and textiles, £304,052; cocoa and chocolate, £23,895; milk, £80,655; cigars, £12,370; watches and clocks, £40,338.

(xiii.) *United States of America.* Apparel and textiles, £164,266; arms, ammunition, and explosives, £112,094; boots and shoes, £42,895; clocks and watches, £36,471; drugs and chemicals, £65,801; fish, preserved, £104,013; furniture, £46,583; agricultural implements and machinery, £182,264; scientific instruments, £45,156; iron and steel, £106,949; leather and leather manufactures, £84,291; machines and machinery, £392,057; machine tools, £52,216; manufactures of metals, £408,462; oils, kerosene, £369,924; oils, other, £129,631; paper, £250,276; railway material, £74,548; resin, £44,604; timber, £606,693; tobacco, £312,266; tools of trade, £140,480; turpentine, £59,268; vehicles, bicycles, motors, etc., £73,515; wax, paraffin, £35,317; wicker and wood manufactures, £56,714.

In addition to the direct imports from the United States, which include Canadian goods to the value of £15,000, United States goods to the value of nearly £1,000,000 were received through other countries. The greater part of this indirect trade from the United States is received through the United Kingdom, and the principal articles thus received are—apparel and textiles, boots and shoes, leather, machines and machinery, and tobacco.

8. **Direction of Exports.**—The following table shews the average yearly value of exports to principal countries during each quinquennial period from 1887 to 1906 and for the year 1906. As in the case of the import trade, considerable alteration in the direction of exports is evident. The largest increases in exports to British possessions are shewn for the various South African colonies, due to exports of agricultural and pastoral produce and timber, and to India and Ceylon, mainly due to exports of gold, and in some recent years also of timber, chiefly railway sleepers. The large increases in the case of Belgium, Germany and France are more apparent than real, and are mainly due to the increase in local sales of wool, skins, etc., and the resulting direct export to the

countries mentioned, while formerly a much larger proportion of wool, etc., was sent to the United Kingdom for sale, and ultimately found its way from there to the Continent:—

TRADE WITH VARIOUS COUNTRIES, 1887 to 1906.

EXPORTS (INCLUDING BULLION AND SPECIE).

Country.	Yearly Average of Quinquennial Periods.				Year.
	1887-91.	1892-6.	1897-1901.	1902-6.	1906.
	£	£	£	£	£
United Kingdom	22,003,741	23,030,779	25,337,456	25,461,689	32,854,049
British Possessions—					
Canada	503	12,793	77,627	172,757	732,688
Cape Colony	84,786	80,515	1,840,961	2,116,733	1,179,830
Ceylon	87,404	434,081	1,188,136	4,249,831	3,648,645
Fiji	105,267	121,771	173,080	246,671	308,590
Hong Kong	415,885	489,987	375,559	579,829	726,094
India	735,701	404,986	1,220,179	3,336,387	3,520,499
Mauritius	105,764	54,890	36,992	52,075	62,562
Natal	81,498	100,756	672,114	1,062,293	678,043
New Guinea	12,677	17,682	46,150	46,744	48,544
New Zealand	748,444	987,718	1,131,067	1,725,234	2,391,767
Straits Settlements ...	107,523	105,040	103,742	209,612	481,777
Other British Possessions ...	6,770	10,128	30,438	77,961	71,873
Total British Possessions	2,492,222	2,820,347	6,896,045	13,876,127	13,850,912
Total British Countries ...	24,495,963	25,851,126	32,233,501	39,337,816	46,704,961
Foreign Countries—					
Argentine Republic ...	...	195	20,938	30,485	52,471
Belgium	1,341,908	1,422,378	1,488,785	2,695,512	4,804,268
Chile and Peru	116,931	155,666	239,390	473,649	908,444
China	43,884	23,778	208,601	242,580	222,790
France	663,672	2,064,639	2,641,244	4,190,591	5,553,055
Germany	559,697	1,580,692	2,128,596	3,406,633	3,725,974
Hawaiian Isl., New Britain, New Caledonia, New Hebrides and South Sea Isl.	275,892	227,754	349,922	350,796	355,047
Italy	16,136	44,954	177,742	156,913	179,198
Japan	8,950	48,232	138,686	580,670	1,210,138
Java	57,921	70,582	125,285	157,559	210,101
Netherlands	18,013	45,008	69,634	226,958	334,908
Norway and Sweden ...	10	2,404	1,590	3,929	15,136
Philippine Islands ...	117,471	24,664	150,999	331,047	436,389
Spain	10,692	7,047	12,835	61,300	152,373
United States of America ...	1,642,587	1,263,128	3,941,509	2,591,428	4,338,701
Other Foreign Countries ...	77,826	234,656	510,600	408,116	533,809
Total Foreign Countries	4,951,590	7,215,777	12,206,356	15,908,166	23,032,802
Total	29,447,553	33,066,903	44,439,857	55,245,982	69,737,763

If each item be expressed as a percentage on the total export, the results will be as follows:—

EXPORTS.—PERCENTAGES OF THE EXPORT TO EACH COUNTRY ON THE TOTAL EXPORTS, 1887 TO 1906.

Country.	1887-91.	1892-6.	1897-1901.	1902-6.	1906.
	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.
United Kingdom	74.74	69.65	57.01	46.09	47.12
British Possessions—					
Canada	...	0.04	0.18	0.32	1.05
Cape Colony	0.29	0.24	4.14	3.83	1.69
Ceylon	0.30	1.31	2.67	7.69	5.23
Fiji	0.36	0.37	0.39	0.45	0.44
Hong Kong	1.41	1.48	0.85	1.05	1.04
India	2.50	1.23	2.75	6.04	5.05
Mauritius	0.36	0.17	0.08	0.09	0.09
Natal	0.28	0.30	1.51	1.92	0.97
New Guinea	0.04	0.05	0.10	0.08	0.07
New Zealand	2.54	2.99	2.55	3.12	3.43
Straits Settlements ...	0.36	0.32	0.23	0.38	0.69
Other British Possessions ...	0.02	0.03	0.07	0.14	0.11
Total British Possessions	8.46	8.53	15.52	25.11	19.86
Total British Countries ...	83.20	78.18	72.53	71.20	66.98
Foreign Countries—					
Argentine Republic ...	...	...	0.05	0.06	0.08
Belgium	4.58	4.30	3.35	4.88	6.89
Chile and Peru	0.39	0.47	0.54	0.86	1.30
China	0.15	0.07	0.47	0.44	0.30
France	2.25	6.24	5.94	7.59	7.96
Germany	1.90	4.78	4.79	6.17	5.34
Hawaiian Isl., New Britain, New Caledonia, New Hebrides and South Sea Isl.	0.93	0.69	0.79	0.63	0.51
Italy	0.05	0.14	0.40	0.28	0.26
Japan	0.03	0.15	0.31	1.05	1.74
Java	0.19	0.21	0.28	0.28	0.30
Netherlands	0.06	0.14	0.16	0.41	0.48
Norway and Sweden ...	...	0.01	...	0.01	0.02
Philippine Islands ...	0.40	0.07	0.34	0.60	0.63
Spain	0.03	0.02	0.03	0.11	0.22
United States of America ...	5.58	3.82	8.87	4.69	6.22
Other Foreign Countries ...	0.26	0.71	1.15	0.74	0.77
Total Foreign Countries...	16.80	21.82	27.47	28.80	33.02
Total	100	100	100	100	100

9. **Exports to the United Kingdom.**—Notwithstanding an increase of nearly 50 per cent. (49.33) in the actual value of exports to the United Kingdom during the year 1906 as compared with the yearly average of the period 1887-91, the proportion of the total exports despatched to the United Kingdom has fallen from 74.74 per cent. in the earlier period to 47.12 per cent in the year 1906.

The principal exports to the United Kingdom during the year 1906 were as follows:—Butter, £2,904,506; fruit, including pulp, £114,229; furs, undressed, £33,368; grain—wheat, £3,228,625; flour, £195,433; hair, £26,363; jewellery and precious stones, £140,079; leather, £440,021; meats—bacon and hams, £4195; frozen—beef, £15,896; mutton, 839,360; rabbits and hares, £486,194; other frozen meat, £36,570; potted meat, £20,208; preserved meat, £107,860; minerals and metals—copper, £1,859,028; gold, £3,203,805; lead, £356,136; ores, n.e.i., £121,264; silver, bullion and ore, £191,563; silver-lead bullion, £781,955; spelter and concentrates, £43,241; tin, ingots and ore, £967,462; oil, cocoanut, £101,031; pearlshell, £216,798; skins, hides, £40,106; rabbits and hares, £378,765; sheep, £688,678; other skins, £227,943; specie, gold, £3,028,704; tallow, £775,851; timber, £167,783; wool—greasy, £8,006,944; scoured, £2,699,237.

10. **Exports to British Possessions.**—The largest relative increase in the value of exports during the period under review has been in the direction of British Possessions. The increase of the value of exports to these countries, 45.5 per cent., has raised the proportion of total exports to British Possessions from 8.46 per cent. during 1887-91 to 19.86 per cent. in 1906. The countries mostly concerned in this great increase—which is in a large measure due to heavy shipments of gold— are Cape Colony, Ceylon, India, and New Zealand.

11. **Principal Exports to British Possessions, 1906.**—These are as follows:—

(i.) *Canada.* The exports to Canada during 1906 are abnormally high owing to an unusual shipment of gold specie, £660,000. Other exports to Canada were:—Butter, £3094; meats, £14,815; oil, cocoanut, £3653; skins, £8185; timber, £5566; tin, £18,750; wool, £8215.

(ii.) *Cape Colony.* Biscuits, £102,265; fodder, £13,032; grain, wheat, £663,348; flour, £96,582; leather, £50,967; meats—frozen beef, £63,185; mutton and lamb, £65,801; other meats, £19,372; sugar, £33,637; timber, £24,701.

(iii.) *Ceylon.* Butter, £5668; horses, £4335; gold, bullion, £101,952; specie, £3,060,000; grain—wheat, £28,763; flour, £16,943; lead, pig, £31,425; silver, bullion, £366,870.

(iv.) *Fiji.* Apparel and textiles, £26,148; biscuits, £17,605; coal, £10,903; drugs and chemicals, £6062; grain, prepared—bran, pollard and sharps, £15,319; flour, £8484; iron and steel, £12,795; metals, manufactures of, £17,314; oils, £12,405; specie, £56,900; timber, £11,839.

(v.) *Hong Kong.* Butter, £17,007; coal, £26,237; fish, £19,618; flour, £146,257; lead, pig, £68,544; sandalwood, £55,970; specie, gold, £360,616.

(vi.) *India.* Coal, £18,287; copper, ingots, £117,322; gold, bullion, £1,503,819; specie, £939,737; horses, £185,254; grain, wheat, £71,448; hay and chaff, £5533; lead, pig, £13,347; meats, £13,441; silver, bullion, £218,220; tallow, £11,092; timber, £386,268; wool, £12,084.

(vii.) *Mauritius.* Coal, £5308; flour, £40,634; mutton, £4665; timber, £5096.

(viii.) *Natal.* Animals, living—horses, £8193; sheep, £33,720; butter, £106,061; fodder, £4261; fruit, £6908; grain—wheat, £24,487; bran, pollard and sharps, £6502; flour, £175,209; jams and jellies, £11,765; meats, frozen—beef, £83,694; mutton, £142,031; pork, £10,944; poultry, £5708; meats, preserved, £5328; plants and trees, £6065; timber, £11,336.

(ix.) *New Guinea.* Apparel and textiles, £4183; flour, £1266; meats, £5732; tobacco, £5178.

(x.) *New Zealand.* Animals, living, horses, £3261; apparel and textiles, £79,215; boots and shoes, £18,974; coal, £91,330; drugs and chemicals, £65,182; electrical materials, £20,581; fruit, fresh, £37,331; bottles, £25,393; grain—maize, £5086; oats, £6904; flour, £7558; rice, £23,233; implements and machinery, agricultural, £22,135; indiarubber manufactures, £34,381; instruments, musical, £12,296; iron and steel,

£12,756; jewellery and precious stones, £17,106; lead—pig, £16,755; sheet and piping, £16,975; leather and leather manufactures, £30,469; machines, £54,438; manures, £44,550; metals, manufactures of, £36,179; onions, £6806; potatoes, £70,380; salt, £16,129; seeds, £7154, soap, £22,515; specie—gold, £830,000; silver, £13,500; bronze, £250; spirits, £21,438; stationery, £16,710; sugar, £81,028; tea, £50,725; timber, £140,001; tin, ingots, £21,464; tobacco, £46,733; vessels, £12,800; wine, £23,405.

(xi). *Straits Settlements.* Animals, living, horses, £18,022; butter, £11,323; coal, £96,171; gold, specie, £80,055; grain, flour, £130,689; machines and machinery, £7570; meats, £15,550; timber, £6511; tin ore, £91,743.

12. **Exports to Foreign Countries.**—The foregoing table shews a very great increase in the value of exports to foreign countries, both in actual amounts and in relation to total exports. The value of exports to foreign countries during 1906 shews an increase of 365 per cent. over similar figures for the years 1887-91, thus increasing the proportion per cent. of all exports from 16.80 per cent. in the earlier years to 33.02 per cent. in 1906. This increase is chiefly due to the growing demand among foreign nations for Australian wool, large consignments of which are now made direct to Belgium, France, Germany, and the United States.

13. **Principal Exports to Foreign Countries.**—These are as follows:—

(i.) *Argentine Republic.* Agricultural implements and machinery, £31,847; timber, £19,835.

(ii.) *Belgium.* Copper, £219,750; grain, wheat, £6998; lead, £161,081; leather, £23,254; silver ore, £383,747; skins, £269,550; spelter, £495,238; tin, £86,552; wool, £3,113,778.

(iii.) *Chile.* Coal, £267,808; flour, £14,527; wheat, £368,139.

(iv.) *China.* Horses, £5942; butter, £14,518; coal, £31,652; copper, £34,297; flour, £4539; lead, £19,191; sandalwood, £9299; specie, gold, £6100; timber, undressed, £81,673.

(v.) *France.* Copper, £112,853; lead, £23,169; spelter, £95,896; skins, £678,945; tin, £26,329; wool, £4,577,034.

(vi.) *Germany.* Bark, tanning, £110,754; copper, £125,426; fruit, £18,076; grain, wheat, £9743; lead, £47,492; linseed cake and oilcake, £9860; oils, £23,408; ore, silver, £29,175; ores n.e.i., £71,578; sausage casings, £34,728; skins, £53,600; spelter, £28,968; tallow, £10,424; timber, £33,472; tin, £103,980; wool, £2,962,586.

(vii.) *Italy.* Copper, £22,314; skins, £46,052; tallow, £10,652; wheat, £34,056; wool, £58,971.

(viii.) *Japan.* Copper, £19,550; grain—flour, £35,325; wheat, £6623; lead, £46,282; manures, £10,627; oils, £16,625; specie, gold, £700,000; tallow, £37,940; vessels, £14,000; wool, £279,860.

(ix.) *Java.* Butter, £29,886; coal, £30,848; drugs and chemicals, £11,616; flour, £107,319; horses, £12,296.

(x.) *Netherlands.* Lead, £55,439; oil, cocoanut, £6499; shale, kerosene, £16,572; silver ore, £86,356; spelter, £132,931; tallow, £16,767.

(xi.) *Peru.* Coal, £47,926; wheat, £208,000.

(xii.) *Philippine Islands.* Butter, £25,431; coal, £133,032; flour, £95,569; fodder, £10,014; meats, £132,145; timber, £12,556.

(xiii.) *Spain.* Wheat, £152,163.

(xiv.) *United States of America.* Coal, £36,032; copper, £545,940; gold—bullion, £144,157; specie, £2,195,000; ores, £10,260; silver in matte, £39,410; skins, £313,318; tin, £87,172; wool, £912,679.

§ 6. Trade of Commonwealth since Federation.

1. **Classified Summary of Australian Trade.**—The tables hereunder present the trade of the Commonwealth during each of the years 1901-6, arranged in classes according to the nature of the goods.

It was long ago pointed out[1] that the statistical presentation of imports and exports would be increased in value by being properly arranged under categories (classes and orders). The following arrangement has been adopted, viz.:—

STATISTICAL CLASSIFICATION OF IMPORTS AND EXPORTS.

Class.	Articles.
I.	FOODSTUFFS of animal origin, excluding, however, living animals.
II.	FOODSTUFFS of vegetable origin, and common salt.
III.	BEVERAGES, non-alcoholic only, and the substances used in making them.
IV.	SPIRITS AND ALCOHOLIC LIQUORS, including spirits for industrial purposes, and such pharmaceutical preparations as are dutiable as spirits.
V.	TOBACCO, and all preparations thereof.
VI.	LIVE ANIMALS.
VII.	ANIMAL SUBSTANCES, mainly manufactured, which are not foodstuffs.
VIII.	VEGETABLE SUBSTANCES and non-manufactured fibres.
IX.	APPAREL, TEXTILES, and various manufactured fibres.
X.	OILS, FATS, AND WAXES.
XI.	PAINTS AND VARNISHES.
XII.	STONES AND MINERALS, used industrially.
XIII.	SPECIE, gold, silver, and bronze.
XIV.	METALS, UNMANUFACTURED, and ores.
XV.	METALS, PARTLY MANUFACTURED.
XVI.	METALS, MANUFACTURED, including machinery.
XVII.	LEATHER AND MANUFACTURES of leather, together with all substitutes therefor, and also INDIARUBBER AND INDIARUBBER MANUFACTURES.
XVIII.	WOOD AND WICKER, both raw and manufactured.
XIX.	EARTHENWARE, CEMENTS, CHINA, GLASS AND STONEWARE.
XX.	PAPER AND STATIONERY.
XXI.	JEWELLERY, TIMEPIECES, AND FANCY GOODS.
XXII.	OPTICAL, SURGICAL, AND SCIENTIFIC INSTRUMENTS.
XXIII.	DRUGS, CHEMICALS, AND FERTILISERS.
XXIV.	MISCELLANEOUS.

IMPORTS ARRANGED IN CLASSES, 1901 TO 1906.

Classes.	1901.	1902.	1903.	1904.	1905.	1906.
	£	£	£	£	£	£
I. Animal foodstuffs, etc.	793,365	1,171,313	941,890	654,509	686,081	697,830
II. Vegetable foodstuffs, etc. ...	2,925,965	3,143,911	5,346,836	1,570,320	1,498,196	1,798,918
III. Beverages (non-alcoholic), etc. ...	1,054,324	924,407	941,975	1,122,567	1,134,653	1,206,216
IV. Alcoholic liquors, etc.	1,845,438	1,623,190	1,290,878	1,236,829	1,346,419	1,388,671
V. Tobacco, etc.	717,915	652,529	570,776	542,182	535,133	620,812
VI. Live animals	40,306	144,153	40,694	67,765	86,128	118,907
VII. Animal substances, etc.... ...	124,017	204,267	240,302	272,754	310,339	456,071
VIII. Vegetable substances, etc. ...	459,361	563,241	552,745	540,519	578,561	717,715
IX. Apparel, etc.	12,065,367	11,577,764	9,589,790	11,540,786	12,017,280	13,508,844
X. Oils, etc.	1,290,252	848,022	963,145	921,184	903,638	1,023,410
XI. Paints, etc.	385,049	321,111	270,588	327,435	348,833	352,356
XII. Stones, etc.	131,095	106,865	82,628	89,821	77,115	91,676
XIII. Specie	172,396	199,359	40,026	35,553	84,320	230,957
XIV. Metals, ores, etc....	984,327	1,475,161	1,444,158	1,400,819	1,668,072	2,381,566
XV. Metals, part manufactured ...	1,062,309	834,180	407,718	438,771	479,414	646,179
XVI. Metals, manufactured	7,491,636	7,447,619	6,476,918	6,341,901	6,550,189	7,932,675
XVII. Leather, etc.	523,565	536,019	532,350	668,759	673,118	924,968
XVIII. Wood, etc.	1,814,382	1,625,902	1,233,745	1,679,348	1,423,862	1,698,766
XIX. Earthenware, etc.	925,101	745,115	576,805	614,913	597,787	688,510
XX. Paper, etc.	1,731,330	1,533,113	1,498,259	1,724,195	1,721,174	1,888,474
XXI. Jewellery, etc.	1,065,348	967,311	845,591	945,759	888,391	1,045,164
XXII. Instruments, etc.	218,437	183,300	171,201	169,725	210,134	285,771
XXIII. Drugs, etc.	1,472,162	1,403,673	1,341,711	1,431,578	1,587,613	1,732,543
XXIV. Miscellaneous	3,140,345	2,444,425	2,410,747	2,682,850	2,945,331	3,357,918
Grand total	42,433,811	40,675,950	37,811,471	37,020,842	38,346,731	44,744,912

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[1] By R. M. Johnston, C.M.G., I.S.O., the Statistician of the State of Tasmania.

The exports are shewn according to the same classification, and the usual distinction is made between exports of Australian produce and re-exports. It will be seen what a small proportion of the total exports is made up by re-exports, and that more than one-half of the latter consists of specie:—

EXPORTS ARRANGED IN CLASSES, AND DISTINGUISHING AUSTRALIAN PRODUCE AND THE PRODUCE OF OTHER COUNTRIES, 1901 TO 1906.

Classes.	1901.	1902.	1903.	1904.	1905.	1906.
AUSTRALIAN PRODUCE.						
	£	£	£	£	£	£
I. Animal foodstuffs, etc.	4,104,196	2,801,258	3,057,675	4,141,052	4,716,942	5,648,049
II. Vegetable foodstuffs, etc. ...	4,633,926	2,589,118	837,866	6,924,160	5,976,775	6,652,951
III. Beverages (non-alcoholic), etc. ...	2,598	2,871	3,011	3,331	2,067	3,750
IV. Alcoholic liquors, etc.	134,630	158,310	115,278	114,428	123,975	107,899
V. Tobacco, etc.	5,030	2,869	11,141	26,622	40,021	40,444
VI. Live animals	473,601	280,467	199,257	250,334	403,337	315,043
VII. Animal substances, etc. ...	16,754,006	15,043,603	16,124,240	18,755,610	22,294,516	25,696,491
VIII. Vegetable substances, etc. ...	142,060	131,172	125,169	156,209	267,977	291,437
IX. Apparel, etc.	42,142	24,301	34,873	44,012	42,459	61,889
X. Oils, etc.	843,755	649,615	539,364	787,398	956,109	1,071,842
XI. Paints, etc.	620	974	2,709	1,782	2,038	3,237
XII. Stones, etc.	1,041,974	986,213	1,109,807	811,717	897,354	927,560
XIII. Specie	8,884,816	8,622,059	11,022,324	10,128,408	4,255,703	9,851,558
XIV. Metals, ores, etc.	8,916,269	8,360,227	10,603,042	11,277,348	11,936,606	13,327,210
XV. Metals, part manufactured ...	3,802	2,433	7,240	4,630	9,971	22,239
XVI. Metals, manufactured	117,662	72,929	129,317	106,217	138,682	149,952
XVII. Leather, etc.	680,692	683,863	546,609	424,806	554,857	591,208
XVIII. Wood, etc.	666,024	563,064	856,816	840,238	1,081,716	1,009,607
XIX. Earthenware, etc.	6,600	12,253	14,739	12,713	16,727	26,706
XX. Paper, etc.	22,171	27,247	32,402	35,400	38,911	46,734
XXI. Jewellery, etc.	67,978	71,177	76,439	78,069	156,712	148,668
XXII. Instruments, etc.	507	1,104	1,758	1,611	2,100	1,832
XXIII. Drugs, etc.	86,299	89,942	112,089	127,753	140,383	168,972
XXIV. Miscellaneous	130,418	91,712	95,718	95,804	121,730	134,594
Total	47,741,776	41,268,781	45,658,883	55,100,167	54,127,758	66,290,874
OTHER PRODUCE.						
I. Animal foodstuffs, etc.	35,291	123,608	92,287	29,079	47,734	21,082
II. Vegetable foodstuffs, etc. ...	80,371	83,543	141,397	139,718	193,766	200,710
III. Beverages (non-alcoholic), etc. ...	43,308	40,637	78,325	64,932	54,288	63,419
IV. Alcoholic liquors, etc.	55,732	49,069	38,461	41,285	37,972	32,960
V. Tobacco, etc.	61,753	44,428	47,344	46,316	39,238	34,586
VI. Live animals	105	485	3,476	2,224	6,991	3,713
VII. Animal substances, etc. ...	10,070	19,143	25,560	21,743	4,359	12,790
VIII. Vegetable substances, etc. ...	17,625	28,546	17,199	16,729	9,568	14,709
IX. Apparel etc.	171,014	186,445	220,873	196,491	170,306	196,098
X. Oils, etc.	42,292	38,766	52,634	48,060	46,777	44,783
XI. Paints, etc.	15,186	7,802	8,918	9,761	11,142	7,003
XII. Stones, etc.	2,043	1,302	2,138	2,775	2,000	1,883
XIII. Specie	846,921	1,442,902	1,241,082	862,330	1,421,660	2,067,901
XIV. Metals, ores, etc.	9,744	18,218	55,615	374,474	50,791	52,278
XV. Metals, part manufactured ...	13,806	12,727	12,105	15,345	26,404	58,991
XVI. Metals, manufactured	196,334	193,251	202,676	181,675	193,947	200,876
XVII. Leather, etc.	13,074	18,105	18,138	20,514	23,046	28,955
XVIII. Wood, etc.	32,135	30,025	24,749	19,994	26,149	34,436
XIX. Earthenware, etc.	23,337	19,716	15,864	16,184	18,536	22,756
XX. Paper, etc.	52,171	49,810	55,090	55,400	49,471	61,655
XXI. Jewellery, etc.	54,431	58,538	77,332	59,478	66,147	39,328
XXII. Instruments, etc.	13,555	8,870	11,683	13,244	9,329	21,660
XXIII. Drugs, etc.	42,976	41,697	45,928	36,879	35,595	45,735
XXIV. Miscellaneous	121,122	128,653	107,305	111,118	163,059	147,612
Total	1,954,396	2,646,306	2,591,229	2,385,748	2,713,277	3,437,889

EXPORTS ARRANGED IN CLASSES, AND DISTINGUISHING AUSTRALIAN PRODUCE AND THE PRODUCE OF OTHER COUNTRIES, 1901 to 1906.—Continued.

Classes.	1901.	1902.	1903.	1904.	1905.	1906.
TOTAL PRODUCE.						
	£	£	£	£	£	£
I. Animal foodstuffs, etc	4,139,487	2,924,866	3,149,962	4,170,731	4,764,676	5,669,081
II. Vegetable foodstuffs, etc. ...	4,714,297	2,672,661	979,263	7,063,878	6,170,541	6,853,661
III. Beverages (non-alcoholic), etc. ...	45,906	43,508	76,336	63,263	56,355	67,169
IV. Alcoholic liquors, etc.	190,362	207,399	153,739	155,713	161,947	140,879
V. Tobacco, etc.	66,783	47,297	58,485	72,938	79,259	75,030
VI. Live animals	473,706	239,952	202,733	252,558	410,328	318,756
VII. Animal substances, etc. ...	16,764,076	15,062,746	16,149,800	18,777,353	22,298,875	25,709,281
VIII. Vegetable substances, etc. ...	159,635	159,718	142,363	172,033	277,545	306,146
IX. Apparel, etc.	213,156	210,746	255,746	240,503	212,767	259,987
X. Oils, etc.	836,047	648,381	592,048	785,458	1,002,846	1,116,625
XI. Paints, etc.	15,806	8,776	11,627	11,543	13,180	10,240
XII. Stones, etc.	1,044,017	987,515	1,111,945	814,492	899,354	929,443
XIII. Specie	9,731,737	10,064,961	12,263,416	10,990,738	5,677,363	11,939,459
XIV. Metals, ores, etc.	8,926,013	8,878,445	10,659,657	11,651,817	11,987,487	13,379,488
XV. Metals, part manufactured ...	17,608	15,160	26,345	19,973	36,375	81,230
XVI. Metals, manufactured	313,996	266,180	331,993	287,892	332,629	350,828
XVII. Leather, etc.	673,766	701,968	564,747	445,320	577,903	620,163
XVIII. Wood, etc.	698,159	598,089	981,565	860,232	1,057,865	1,044,043
XIX. Earthenware, etc.	29,937	31,969	30,603	28,897	35,283	49,464
XX. Paper, etc.	74,342	77,057	87	90,800	88,382	108,389
XXI. Jewellery, etc.	122,409	129,715	153,771	137,567	222,850	187,996
XXII. Instruments, etc.	14,062	9,974	13,414	14,755	11,429	23,492
XXIII. Drugs, etc.	129,275	131,680	158,017	164,832	175,978	214,707
XXIV. Miscellaneous...	251,540	220,365	203,023	206,922	239,789	282,206
Total	49,696,172	43,915,087	48,250,112	57,485,915	56,841,035	69,737,763

§ 7. Movements of Noble Metals.

1. **Specie and Bullion.**—The following tables shew the value of gold and silver bullion and specie, including bronze specie, imported and exported during the years 1901-6 :—

AUSTRALIAN IMPORTS AND EXPORTS OF SPECIE AND BULLION, 1901 TO 1906.

Items.	1901.	1902.	1903.	1904.	1905.	1906.
IMPORTS.						
	£	£	£	£	£	£
Gold—Specie	3,710	103,966	1,342	1,294	25,098	81,790
Bullion	762,415	1,259,770	1,219,852	1,168,139	1,452,432	2,066,063
Total	766,125	1,363,736	1,221,194	1,169,433	1,477,530	2,147,853
Silver—Specie	158,656	90,256	32,904	31,758	53,719	140,764
Bullion	54	50	51	156	13,543	33,897
Total	158,710	90,306	32,955	31,914	67,262	174,661
Bronze—Specie	10,029	5,137	5,780	2,501	5,503	8,403
Grand total ...	934,864	1,459,179	1,259,929	1,203,848	1,550,295	2,330,917

Items.	1901.	1902.	1903.	1904.	1905.	1906.
EXPORTS.						
	£	£	£	£	£	£
Gold—Specie	9,708,087	10,011,871	12,251,274	10,961,650	5,656,245	11,915,685
Bullion	4,616,089	4,503,679	6,145,296	5.923,953	5,299,748	4,955,600
Total	14,324,076	14,515,550	18,396,570	16,885,603	10,955,993	16,871,285
Silver—Specie	23,370	51,869	11,478	28,663	14,418	23,521
Bullion	922,443	798,853	715,256	852,378	818,408	814,574
Total	945,813	850,722	726.734	881,041	832,816	838,095
Bronze—Specie	330	1,221	654	425	6,705	553
Total { Australian produce	14,423,298	13,912,591	17,835,214	16,540,000	10,332,512	15,584,836
Total { Other produce ...	846,921	1,454,902	1,288,744	1,227,069	1,463,002	2,125,097
Grand total ...	15,270,219	15,367,493	19,123,958	17,767,069	11,795,514	17,709,933

Value of ores not included.

IMPORTS AND EXPORTS OF SPECIE AND GOLD AND SILVER BULLION FROM AND TO PRINCIPAL COUNTRIES, 1906.

Country.	Imports.			Exports.		
	Specie.	Bullion.	Total.	Specie.	Bullion.	Total.
	£	£	£	£	£	£
United Kingdom ...	137,653	412	138,065	3,029,304	3,391,692	6,420,996
Canada	...	...	...	660,000	...	660,000
Ceylon	...	...	...	3,060,000	468,822	3,528,822
Fanning Island ...	...	...	...	800	...	800
Fiji	...	...	...	56,900	...	56,900
Hong Kong	...	...	...	360,616	2,496	363,112
India...	...	...	...	939,737	1,722,039	2,661,776
New Guinea	...	46,484	46,484	100	...	100
New Zealand	90,553	2,052,842	2,143,395	843,750	...	843,750
Straits Settlements ...	...	...	...	80,055	...	80,055
Total British Countries	228,206	2,099,738	2,327,944	9,031,262	5,585,049	14,616,311
Japan	...	...	...	700,000	...	700,000
United States of America	...	222	222	2,195,000	183,567	2,378,567
Other Countries ...	2,751	...	2,751	13,197	1,858	15,055
Total Foreign Countries	2,751	222	2,973	2,908,197	185,425	3,093,622
Grand total	230,957	2,099,960	2,330,917	11,939,459	5,770,474	17,709,933

2. **Imports of Bullion and Specie.**—Of the total imports of bullion and specie into the Commonwealth during 1906, 88.64 per cent. was in the form of gold bullion, and was received almost entirely from New Zealand for the purpose of minting.

3. **Exports of Bullion and Specie.**—Of the total exports of bullion and specie during 1906 gold represented 95.26 per cent., 67.28 per cent. being in the form of specie, and 27.98 per cent. bullion.

The countries which appear as the largest recipients of gold from Australia are the United Kingdom, Ceylon, India, and the United States of America, in the order named, but as large amounts of gold, recorded as exported to Ceylon, are shipped *under option*, and may be despatched thence to any country needing gold, the actual amount sent to each country cannot be stated. The appearance in the returns for 1906 of an export of £660,000 in gold specie to Canada is unusual. The gold was probably *en route* to the United States.

§ 8. Effects of Prices on the Values of Exports.

1. **Significance of Price in Totals.**—In comparing the value of exports from, and also imports into, any country for a series of years the question naturally arises as to how much any variation in the aggregate value is due to fluctuations in prices, and how much to increase or decrease of actual quantities, for, in aggregates expressed only in value—the only possible method when the commodities differ,—the two sources of variation are confused.

The scheme of comparison followed hereinafter is that of the British Board of Trade. This is to select all such articles of export as are recorded by units of quantity, and to apply to the quantities exported during each year the average price per unit ruling in some year, arbitrarily taken for the purposes of comparison, as the basic year. The ratio which the total, obtained by applying to the quantities of the year under review the average prices ruling during the basic year, bears to the total actually recorded for the year under review, may be called the "price-level" of the latter—as compared with the former—for the group of commodities considered, and may be taken (so it is assumed in the method of the British Board of Trade) as a measure of the effect of the change of price in the intervening period. Since the value of the articles used in the calculations represents as much as 82.7 per cent. of all exports during the years 1901-6—after excluding specie and gold bullion, which are not subject to price changes—a fairly extended basis, on which an estimate of the effect of prices over the full range of exports can be founded, is afforded.[1]

2. **Effect of Prices.**—The following table shews the values of exports as actually recorded in each year, together with the values computed on the assumption that the prices of 1901 were maintained.[2] The table also shews the yearly "price-levels," based upon the results so ascertained:—

EFFECT OF PRICES AND PRICE-LEVELS FOR THE PERIOD 1901 TO 1906 (BASIC YEAR, 1901).

Year.	Exports of Specie and Gold Bullion.	Other Exports.		Total Exports (including Specie and Bullion).		Price Levels.[3] Year 1901 = 1000.
		Values as Recorded.	Values Computed on 1901 Prices.	Values as Recorded.	Values Computed on 1901 Prices.	
I.	II. £	III. £	IV. £	V. £	VI. £	VII.
1901 ...	14,338,434	35,357,738	35,357,738	49,696,172	49,696,172	1000
1902 ...	14,567,500	29,347,587	27,375,976	43,915,087	41,943,476	1072
1903 ...	18,408,702	29,841,410	26,697,120	48,250,112	45,105,822	1118
1904 ...	16,914,691	40,571,224	36,139,840	57,485,915	53,054,531	1123
1905 ...	10,977,111	45,863,924	38,465,210	56,841,035	49,442,321	1192
1906 ...	16,895,059	52,842,704	42,295,310	69,737,763	59,190,369	1249

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[1] This basis is thus subject only to the limitations of the fundamental assumption and to its limitation to 82.7 per cent. of the total.

[2] The method of the British Board of Trade is clearly valid for certain purposes, and is adopted because it widens the field of comparison. It is not, however, universally valid.

[3] These are index numbers for the total group of exports, excluding specie and gold bullion.

The above table obviously furnishes[1] a measure of the influence of prices on the value of exports of each year since 1901. Column IV., viz., values computed on 1901 prices, represents the volume of exports (less specie and gold bullion), expressed in the common denominator, viz., the currency unit, and from the figures therein it will be seen that, had the prices of 1901 remained constant, the value of the exports during the year 1906, for example, would have been £42,295,310 only, instead of £52,842,704, viz., the value actually recorded. The difference between these amounts, viz., £10,547,394, results from rise of prices,[1] viz., from the group advance of 24.9 per cent. in the price of commodities in the period intervening between 1901 and 1906.

3. **Influence of Quantity and Price on Total Increased Value of Exports.**—The estimated actual and relative effects of the influence of:—(i.) increase or decrease in the exports of specie and gold bullion; (ii.) increase or decrease of *quantities* of other exports; (iii.) variation of prices; on the value of the exports of each year compared with 1901 is shewn below:—

ANALYSIS OF INFLUENCE OF QUANTITY AND PRICE ON INCREASE OR DECREASE IN EXPORTS, 1902 TO 1906, COMPARED WITH 1901.

Year.	Particulars.	Variation above (+) or below (—) 1901 Exports due to change in:—			Total Variation above (+) or below (—) Value of 1901 Exports.
		Export of Specie and Gold Bullion	Quantity of Export other than Specie and Gold Bullion	Prices of Export other than Specie and Gold Bullion.	
1902.	Variation, actual ... ... £	+229,066	—7,981,762	+1,971,611	—5,781,085
	Relative magnitude of variation. Total variation taken as 100	+4	—138	+34	—100
	Variation, per cent.	+1.60	—22.57	+7.20	—11.63
1903.	Variation, actual ... ... £	+4,070,268	—8,660,618	+3,144,290	—1,446,060
	Relative magnitude of variation. Total variation taken as 100	+281	—597	+217	—100
	Variation, per cent.	+28.38	—24.49	+11.78	—2.91
1904.	Variation, actual ... ... £	+2,576,257	+782,102	+4,431,384	+7,789,743
	Relative magnitude of variation. Total variation taken as 100	+33	+10	+57	+100
	Variation, per cent.	+17.96	+2.2	+12.26	+15.67
1905.	Variation, actual ... ... £	—3,361,323	+3,107,472	+7,398,714	+7,144,863
	Relative magnitude of variation. Total variation taken as 100	—47	+43	+104	+100
	Variation, per cent.	—23.44	+8.79	+19.24	+14.37
1906.	Variation, actual ... ... £	+2,556,625	+6,937,572	+10,547,394	+20,041,591
	Relative magnitude of variation. Total variation taken as 100	+13	+35	+52	+100
	Variation, per cent.	+17.83	+19.62	+24.94	+40.32

From the above figures it will be seen that the exports of 1906, for example, as compared with 1901, shew an increase of 17.83 per cent. in specie and gold bullion, an increase of 19.62 per cent. in the quantities of other exports, and an increase of 24.94 per cent. in the group-prices for all exports, excluding specie and gold bullion. These aggregate to 40.32 per cent., or absolutely £20,041,591. Thus, of this total increase, the amount £2,556,625, or 13 per cent., was due to increased exports of specie and gold bullion; £6,937,572, or 35 per cent., was due to increased quantities of other exports, and £10,547,394, or 52 per cent., was due to increased prices.

§ 9. External Trade of Australia and other Countries.

1. **Essentials of Comparisons.**—Direct comparisons of the external trade of any two countries are possible only when the general conditions prevailing therein, and the scheme of recording, are sensibly identical. For example, in regard to the mere matter of record, it may be observed that in one country the value of imports may be the value at the port of shipment, while in another the cost of freight, insurance, and charges may

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[1] On the fundamental assumption.

be added thereto. Or again, the values of imports and exports in the one may be declared by merchants, whereas in the other they may be the official prices, fixed from time to time by a commission constituted for the purpose. The figures relating to the external trade of any country are also affected in varying degree by the extent to which they include transit or re-export trade. Including bullion and specie, the transit trade of Belgium, for example, represents 41.93 per cent. of the gross trade recorded; of Switzerland, 32.97 per cent.; of France, 20.29 per cent., and of the United Kingdom, 24.56 per cent., whereas in Australia the same element represents only 6 per cent., and in New Zealand even less.

2. "Special Trade" of Various Countries.—Special trade may be defined, agreeably to the practice of the British Board of Trade, as (*a*) imports entered for consumption in the country (as distinguished from imports for transhipment or re-export), and (*b*) exports of domestic products.

In the following table the figures relate, as nearly as is possible, to imports entered for consumption in the various countries quoted, and to exports of their domestic products. It is to be noted, however, that these figures do not unequivocally denote the same thing throughout, since, in the United Kingdom and other manufacturing countries, raw or partly manufactured materials are imported as for home consumption, and, after undergoing some process of manufacture or further modification, are re-exported as domestic production. Nevertheless a comparison of this character reveals certain features of trade which otherwise would not be manifest.

TRADE OF VARIOUS COUNTRIES, (IMPORTS FOR HOME CONSUMPTION AND EXPORTS OF DOMESTIC PRODUCTS, INCLUDING BULLION AND SPECIE), 1905 OR 1906.

Country.	Year ended.	Trade.			Trade per Inhabitant.		
		Imports.	Exports.	Total.	Imports.	Exports.	Total.
		£	£	£	£ s. d.	£ s. d.	£ s. d.
COMMONWEALTH OF AUSTRALIA	31/12/06	41,901,000	66,306,000	108,207,000	10 5 4	16 4 7	26 9 11
United Kingdom	"	524,634,000	375,575,000	900,209,000	12 0 4	8 12 0	20 12 4
Canada	30/6/06	60,492,000	49,060,000	109,552,000	10 11 11	8 11 10	19 2 9
New Zealand	31/12/06	14,957,000	17,840,000	32,797,000	16 14 1	19 18 5	36 12 6
United States of America ...	30/6/06	278,011,000	375,577,000	653,588,000	3 6 6	4 9 10	7 16 4
Argentine Republic*	31/12/05	41,031,000	64,569,000	105,600,000	8 0 8	12 12 11	20 13 7
Austria-Hungary	"	91,755,000	95,971,000	187,726,000	1 18 7	2 0 5	3 19 0
Belgium	"	124,098,000	94,168,000	218,266,000	17 8 8	13 4 7	30 13 3
Denmark	"	22,363,000	21,718,000	44,081,000	8 14 9	8 9 8	17 4 5
France	"	226,545,000	203,967,000	430,512,000	5 15 6	5 4 1	10 19 7
German Empire	"	365,613,000	287,222,000	655,835,000	6 0 2	4 14 4	10 14 6
Italy	"	8,366,000	69,567,000	158,933,000	2 13 6	2 1 8	4 15 2
Japan	"	5,900,000	33,578,000	84,478,000	1 1 5	0 14 2	1 15 7
Norway	"	15,739,000	10,495,000	26,234,000	6 16 6	4 11 1	11 7 7
Portugal	"	13,787,000	6,834,000	20,621,000	2 13 3	1 6 5	3 19 8
Spain	"	4,363,000	38,195,000	80,558,000	2 4 5	2 0 1	4 4 6
Sweden	"	32,338,000	25,012,000	57,350,000	6 2 7	4 14 9	10 17 4
Switzerland	"	58,333,000	40,313,000	98,646,000	16 17 3	11 13 1	28 10 4

* Official values are said to be 25 per cent. below real values.

It is of interest to notice that the total trade per inhabitant of the United Kingdom and the Argentine Republic are practically identical, the exports in the former, however, being about two-fifths, and imports about three-fifths of the total, while in the Argentine Republic this relation is reversed. The total trade of Australia is about 28 per cent. greater than that of the Argentine Republic, but the ratio of imports to exports is sensibly identical.

3. External Trade as a Measure of Prosperity.—External trade as a measure of prosperity is by no means unequivocal. Comparisons can be accepted as furnishing satisfactory indications of the relative progress or welfare of different countries, only when taken together with all other facts that should be considered in this connection. It is, for example, obvious that the external trade of a community depends not only upon the aggregate of its requirements, but also upon the extent to which it fails to supply requirements from its own resources. A community largely self-contained, for example, may have but a small external trade per head, and yet, by virtue of its capacity to produce and manufacture its own raw material, may actually enjoy greater prosperity and a higher standard of living than another country whose external trade per head is much greater. The same observation applies equally to comparisons of the trade of the same country at different periods. A young country, the industries and export trade of which are mainly connected with raw or natural products, may, for example, through internal development, find the growth of its external trade diminishing per head of population without necessarily suffering any real diminution in the well-being of its people. And it is further obvious that circumstances may arise when enlargement of both imports and exports is actually a consequence of economic difficulties. For example, in 1903, owing to shortage in the local supply, it became necessary to *import* wheat and flour into Australia to the value of £2,556,968, and to meet the charges for this by equivalent *exports*, the effect, considered *per se*, being to enlarge both. In this case, however, the increase is not an evidence of economic progress.

4. **Australian Trade Evidence of Prosperity.**—Despite the above suggestions regarding the necessity of caution, so as to avoid hasty inferences based upon aggregate trade, a consideration of its general characteristics over a number of years, and of its marked development, without any counterbalancing elements of disadvantage, will suffice to shew that Australian affairs are progressing rapidly and most favourably.

§ 10. Trade of the United Kingdom with Australia. Has it been Diverted?

1. **General.**—The question has been raised at times whether there be a diversion of the trade of the United Kingdom with Australia, and this question has naturally become during recent years one of more than ordinary interest with publicists in both countries. The Advisory Committee on Commercial Intelligence of the British Board of Trade considered the matter of such importance that in June, 1905, Mr. R. J. Jeffray was sent to Australia as a Commissioner to investigate the conditions and prospects of British trade therewith. To thoroughly treat the various changes in the character and volume of the import trade from Great Britain, and from her more important competitors, viz., the United States of America and Germany, would require more space than can be spared in this volume, so that attention must perforce be restricted to the most important features of the question at issue.

2. **Proportion of Trade from United Kingdom.**—The percentages given in the following table shew the proportions of the imports into Australia from the United Kingdom, and from the other countries mentioned, during each of the years 1886 to 1906:—

PROPORTION OF IMPORT TRADE FROM THE UNDERMENTIONED COUNTRIES, 1886 TO 1906.

Year.	Percentage Proportions from—					Year.	Percentage Proportions from—				
	United K'dom.	British Poss'ns.	Germ'y.	United States.	Total Foreign C'tries.		United K'dom.	British Poss'ns.	Germ'y.	United States.	Total Foreign C'tries.
1886	73.37	11.23	2.05	6.11	15.40	1897	66.22	10.72	5.75	10.10	23.06
1887	72.26	12.50	2.28	5.37	15.24	1898	66.62	10.88	5.86	10.16	22.50
1888	71.62	12.03	2.71	6.48	16.35	1899	61.85	11.75	6.07	13.00	26.40
1889	68.98	13.45	3.65	6.67	17.57	1900	61.28	11.28	6.54	12.16	27.44
1890	68.08	12.66	4.77	6.54	19.26	1901	59.47	11.22	6.59	13.80	29.31
1891	70.15	11.40	4.53	6.79	18.45	1902	58.64	13.22	6.53	12.27	28.14
1892	70.74	11.37	4.32	6.04	17.89	1903	52.51	13.17	6.24	16.84	34.32
1893	72.78	12.14	3.40	4.98	15.08	1904	60.68	12.22	7.17	12.40	27.10
1894	71.92	11.96	3.78	5.39	16.12	1905	60.17	14.04	6.42	11.70	25.79
1895	71.62	11.46	4.42	5.95	16.92	1906	59.39	15.09	7.16	10.36	25.52
1896	68.28	10.74	5.31	8.59	20.98						

Before conclusions are drawn from the above table, however, attention must be given to the nature of imports from the United States, since the imports from that country have in some years been increased by imports of breadstuffs, a trade in which the United Kingdom could not participate. The years affected by the imports of breadstuffs were 1886, 1889, 1896, 1897, and 1903. Increased imports of such items as kerosene oil and timber also tend to increase the proportion of imports from the United States without any prejudicial effect on the trade of the United Kingdom. Similar modification is not necessary in regard to Germany, as the nature of the imports from that country is substantially the same as from the United Kingdom.

In order to furnish a comparison free from the influence of trade, which from its nature is not open to the United Kingdom, the following table shewing the imports during 1886 and 1906 of the principal classes of goods which enter largely into the trade of the countries named has been prepared :—

PRINCIPAL IMPORTS FROM THE UNITED KINGDOM, GERMANY AND THE UNITED STATES, 1886 AND 1906.

Nature of Imports.	Year.	United Kingdom.	Germany.	United States.	All Countries.
		£	£	£	£
Animal foods...	1886	348,950	5,603	70,959	674,296
	1906	293,950	24,319	146,781	697,830
Alcoholic liquors	1886	1,801,200	82,185	82,730	2,126,877
	1906	1,053,154	109,426	24,367	1,388,671
Apparel, textiles, etc. (including boots)	1886	9,845,182	54,350	15,336	10,316,989
	1906	11,066,201	418,776	221,362	13,508,844
Manufactures of metal... ...	1886	4,616,924	94,832	311,342	5,190,901
	1906	5,144,912	926,314	1,379,662	7,932,675
Paper and stationery	1886	1,260,531	21,038	39,700	1,340,627
	1906	1,207,729	261,684	288,509	1,838,474
Jewellery, timepieces, and fancy goods	1886	659,833	24,206	57,477	789,127
	1906	740,850	140,950	59,151	1,045,164
Earthenware, cements, etc. ...	1886	755,907	78,762	24,711	938,476
	1906	316,252	227,390	37,344	688,510
Drugs, chemicals, fertilisers, etc.	1886	511,216	8,660	33,382	766,243
	1906	887,325	193,615	82,789	1,732,543
Leather, and mfs. thereof and substitutes thereof, incl. indiarubber	1886	285,601	6,357	53,588	363,332
	1906	682,238	70,028	116,356	924,968
Total above-mentioned imports ...	1886	20,085,344	375,993	689,225	22,506,868
	1906	21,392,611	2,372,502	2,356,321	29,757,679
	Increase	1,307,267	1,996,509	1,667,096	7,250,811
Total imports	1886	25,077,166	699,075	2,087,213	34,178,743
	1906	26,575,833	3,204,844	4,633,553	44,744,912
	Increase	1,498,667	2,505,769	2,546,340	10,566,169

The articles shewn in the above table represent 66.50 per cent. of total imports during 1906, and account for 68.60 per cent. of the increase as compared with 1886. Of the total increase of the above-mentioned articles taken as a group, viz., £7,250,811, £1,307,267, or 18.03 per cent., was from the United Kingdom, £1,996,509, or 27.54 per cent., from Germany, and £1,667,096, or 22.92 per cent., from the United States.

3. **Manufactures of Metals.**—The greatest advance by Germany and the United States has been in the manufactures of metals. The total increase in this class of

goods during the past twenty years was £2,741,774, of which £1,068,320, or 38.96 per cent., was from the United States, £831,482, or 30.33 per cent., from Germany, and £527,988, or 19.26 per cent., from the United Kingdom.

4. Significance of Increase of Trade with Other Countries.—It has been suggested that the larger proportion of imports now received from foreign countries is due to the establishment and increase of direct shipping with the countries concerned, and that trade formerly received through English ports is now received direct. From the Australian records it is obviously impossible to ascertain the value of the indirect trade with foreign countries through the United Kingdom. The returns of the British Board of Trade, however, shew the exports from the United Kingdom to Australia of foreign and colonial products distinct from the domestic exports, and from this source the table hereunder has been compiled.

It is proper here to mention that, taken in quinquennial periods, the values of the total exports from the United Kingdom to Australia—after making allowance for freight and charges—are in very close agreement with the corresponding import values recorded in this country. For example, for the period 1902 to 1906 the difference amounts to only 1.3 per cent.

VALUE OF MERCHANDISE AND BULLION AND SPECIE DESPATCHED FROM THE UNITED KINGDOM TO AUSTRALIA, 1887 TO 1906.

Years.	Merchandise.			Bullion and Specie.	Total.	Percentage Proportion of Foreign and Colonial Produce.
	United Kingdom Produce.	Foreign and Colonial Produce.				
		Re-exported.	Transhipped under Bond.			
	£	£	£	£	£	
1887-1891 ...	20,119,817	2,558,644	872,523	85,278	23,636,262	14.52
1892-1896 ...	14,533,729	1,686,873	547,989	392,523	17,161,114	13.02
1897-1901 ...	19,046,229	1,951,403	444,049	158,919	21,600,600	11.09
1902-1906 ...	18,046,174	2,305,376	908,534	76,624	21,336,708	15.06

From the above table it will be seen that the value and the proportion of foreign goods despatched to Australia through the United Kingdom is now practically the same as in the period 1887-91. During the quinquennium 1887-91 the value of foreign and colonial produce despatched from the United Kingdom to Australia was £3,431,167, equal to 14.52 per cent. of all goods so despatched, while during the period 1902-6 the corresponding amounts were £3,213,910, or 15.06 per cent. It is therefore apparent that the increase of direct imports from foreign countries has not been, in the aggregate, at the expense of the indirect trade *via* Great Britain.

Report of the Advisory Committee on Commercial Intelligence of the Board of Trade.

1. Causes of the Success of Foreign Competition.—In their report, already alluded to in the opening paragraph of this section, the Advisory Committee of the Board of Trade set forth a number of reasons for the advance of foreign competition. These reasons, together with a brief condensation of the accompanying remarks, are as follows :—

(a) *The British Attitude towards the Australian Market.*—The opinion has frequently been expressed that "British manufacturers were too independent, that doing things generally on a big scale they were indifferent in some cases to the Australian market, which in many branches could offer only a small demand and a small profit, and that, consequently, British manufacturers have shewn a good deal of unwillingness to adapt their goods and their methods to Australian conditions and desires." (p. 36.) "Complaints are also made that British manufacturers do not pay sufficient attention to orders—especially small orders—and that they are too slow both in getting out specifications and executing orders when received." (p. 37.)

(b) *Some of the Reasons for the Success of Foreign Competition.*—

(i.) *General Business Methods.*—Foreign manufacturers, notably in Germany and the United States, display "anxiety to adapt their goods to the requirements of their customers . . . . and to make the most careful study of the market in which they are endeavouring to obtain or maintain a footing. . . . It is asserted that the German and American manufacturers are, as a general rule, very attentive to new business and new requirements; no order is too small to receive the same attention as is given to large ones, and a connection once secured is eagerly followed up." (p. 37.)

(ii.) *Commercial Agents.*—"Another point to which attention is frequently drawn is the efficiency of trade representation in Australia, . . . and it appears beyond doubt that in some cases the success of German and American manufacturers has been due to the fact that whilst their British rival has been content to wait orders through the merchants they have gone straight to the Australian buyer and even, perhaps, created a demand, on his part, for a particular class of goods. Another disadvantage under which the United Kingdom has suffered, as compared with foreign countries, is the presence in every important centre of very able and energetic foreign consuls, who . . . devote a large amount of attention to the trade interests of those countries. The United Kingdom has no similar representation." (p. 38.)

(iii.) *Package of Goods.*—"Packages prepared by Americans, particularly for shelf goods, are more useful and economical in the handling than similar goods prepared by both British and Germans, particularly by the former." (p. 39.) "This applies particularly to ironmongery." (p. 38). "In regard to certain chemicals it is declared that England lost the trade mainly because English firms would not pack to suit the Australian market." (p. 39.)

(iv.) *Quality and Prices of Goods.*—"In a very few cases the goods produced by foreign manufacturers are better than those produced by the United Kingdom . . but in many more cases the complaint has been not that they are not so good as foreign products, but that they are too good and consequently too dear for the Australian markets." (p. 39.)

(v.) *Appearance of Goods.*—"Emphasis is laid in a number of instances upon the greater attractiveness of the goods offered by foreign manufacturers. Illustrations of these are dyed goods, coloured prints of various kinds, china ware, glass ware, electroplate goods and fancy articles from America; perfumery from Germany, etc.; in all these an important factor is appearance, and for some reason the Germans and Americans have shewn greater inventiveness in this respect than their English rivals." (p. 39).

(vi.) *Lower Prices.*—"In regard to those commodities for which there is a lower price, combined with more or less equal quality, the explanations of the fact differ considerably. In some cases it is unquestionably due simply to greater efficiency, caused, it may be, by the better adaptation of machinery to the production of goods for a particular market. . . . . . in a few instances reference was made to 'dumping,' but though this was offered occasionally as an explanation of cheapness, which could not otherwise be accounted for, no concrete examples were given. The statements made on this point were rather general arguments as to the economic possibilities and advantages of 'dumping' by manufacturers who had a large and strongly protected home market entirely under their control. Such instances of extensive sales, at apparently altogether unremunerative prices as were quoted, appear to be rather of the nature of organised attempts to make a strong impression upon a market than of 'dumping' in the ordinary sense of the disposal of goods at any price in order to relieve an overloaded home market, without lowering prices in it or reducing the output.

"Another cause of greater cheapness constantly referred to is 'the lower rates of wages' prevalent in countries of the European continent as compared with those ruling in the United Kingdom, but the opinions expressed were generally little more than vague impressions."

(vii.) *Freights.*—"A factor of considerable importance in determining the price at which goods can be sold in Australia is of course freight charges, and in regard to this there is a widespread belief that German and American manufacturers are helped greatly by lower rates than those obtainable by their British competitors. Reference was also made to the specially low export rates given on the German railways, and to the low through rates on exports from that country, but in the main attention was concentrated on the rates for ocean carriage. The following statement gives, in tabular form, instances of rates in recent months, supplied by London shippers :—

	Fine Goods.	"Rough" Rate.	Dead Weight.
	s. d.	s. d.	s. d.
General Cargo Steamers :—			
New York to Sydney (direct)	42 6	27 6	...
" " *via* Liverpool (transhipped there) ...	45 0	30 0	...
Liverpool to Sydney	45 0	35 0	30 0
Mail Steamers :—			
London to Sydney (P. & O., Orient, &c.) ...	60 0	35 0	...
Hamburg to Sydney (North German Lloyd) ...	45 0	25s. to 30s.	14 0
" " (German Australian Line)	about 45s.	20s. to 30s.	15 0
Sailing Vessels :—			
New York to Sydney	...	17 6	...
Hamburg to Sydney	...	25 0	...
Liverpool to Sydney	...	25s. to 30s.	...

"These rates are subject to rebates as follows :—Continental steamers, 10 per cent., payable every six months ; English steamers, 5 per cent. at once and 10 per cent. afterwards ; English sailing vessels, 10 per cent. afterwards.

"It is stated that on Denims the difference in freight alone (thirty-two shillings and sixpence from the United States against forty-five shillings and 10 per cent. from England) is sufficient to kill the British trade. At the end of 1906 flannelette was carried from New York to Sydney, *via* Liverpool, with transhipment at this port, for thirty shillings per 40 cubic feet net ; by the same line the rate from Liverpool to Sydney was forty-two shillings and sixpence, less 5 per cent. deducted immediately but *plus* 10 per cent. deducted again after about eleven months, so that the actual rate (after both rebates) worked out at forty shillings and fourpence halfpenny.

"One Australian firm stated that recently they had brought large quantities of goods from New York, *via* Liverpool, by the White Star Line, at considerably less than the current rate from Liverpool to the colonies. In another case it was alleged that

Scotch pig iron had been imported more cheaply by way of Hamburg than it could be from London or even Glasgow.

"The rates for glassware and indiarubber tubing from Hamburg and Antwerp to New Zealand *via* London (including transhipment there) were actually much lower than from London direct, *e.g.*:—

"From Hamburg or Antwerp, New Zealand *via* London (including transhipment)	25s. through.
"From London to New Zealand	35s.

"Formerly freights from the United States were very much lower than from England, *e.g.*, from New York to Melbourne the steamer rate was at one time fifteen shillings net, as compared with forty-five shillings and 10 per cent. from Liverpool. The two rates are now much closer, the New York rate having gradually advanced to thirty-two shillings and sixpence.

"Complaints and statements of this kind were constantly made, though often in very vague and general terms. The causes ascribed for this particular condition of things were chiefly the alleged subsidising of the German lines by their Government, and, still more, the influence of the Australian shipping ring. There does not appear to be much evidence that the German lines are substantially subsidised, except in so far as the postal subventions are in excess of the value of the services actually rendered, and they are helped by low export rates on the home railways; but, in regard to the Australian shipping ring, or rather the London ring, which controls the Australian trade, complaints are very general as to its influence on rates by the elimination of competition and consequent monopoly, though in some instances emphasis was laid upon the beneficial effects of the combination in steadying rates, and thus freeing merchants from the uncertainty arising from the former frequent and violent fluctuations.

2. **Conclusions.**—"From the general survey of the Australian import trade it will be apparent that it is well-nigh impossible to arrive at any definite conclusions as to the actual extent to which foreign manufacturers have improved their position in the Australian markets at the expense of their British rivals. On the whole, such evidence as exists on this point tends to suggest that the foreign gain has been greater in appearance than in reality, or, rather (to put it in another way), that the United Kingdom has been given in some cases much more than its proper share of credit in the past. It is true that British trade has not expanded greatly, but that is also true of Australian trade as a whole; and if the course of trade since the bad years 1893 to 1895 be examined, it will be seen that though the growth of British trade has not apparently been so large as that of foreign countries it has yet been considerable, and it must be remembered that it is in this period that the changes in the methods of shipments of goods to Australia have taken place.

"But though the progress of foreign competition at the expense of British traders has been somewhat exaggerated, yet there has been such a growth; and it is clear that every effort is being made by foreign traders (notably German and American) to get a strong hold upon the Australian market. So far there is little or nothing to suggest that in the great staple lines of cotton (with the exception of one branch) and iron and steel goods, the British position has been at all menaced; and in the other important staple line, woollen goods, the rivalry which British manufacturers have to encounter has arisen in Australia itself. This is the case also with boots and shoes (since the collapse of the American invasion), hats, and mining machinery; and this competition from Australia itself is certain to develop more and more rapidly. The evidence, as a whole, conveys the impression that in the main the growth of non-British trade has been either in known specialities of foreign countries—silk goods from France, dyed goods from Germany, agricultural machinery and various tools and household utensils from the United States; or, in miscellaneous commodities, which foreign countries can produce very cheaply, and with which British manufacturers do not attempt to compete to any large extent. The conclusion appears to be, on the whole, that British traders have deliberately chosen to restrict themselves to a small number of great main lines of production for the Australian market, and to leave the field offered by the miscellaneous wants of a large community open to their foreign competitors. The demand for cheap goods is also one with which hitherto they have, to a large extent, been reluctant to comply. This policy may be a short-sighted one, and the British manufacturers may have been mistaken in their view of their own interests; but in face of the evidence there can be little doubt as to the fact of a deliberate choice. There is a consensus of opinion that in most of the smaller lines, though, of course, not in absolutely all, British manufacturers could have gained or secured most of the trade had they chosen to make the effort, by regard to small details, attention to the peculiarities of the Australian demand, more vigorous local representation, and greater adaptability.

"Another conclusion which emerges is the widespread belief that something should be done to deal with the problem of freights and to put British and foreign importers to Australia on a more equal footing than is the case at present. Beyond the desire to break down what is widely believed to be a harmful shipping ring, no practical suggestions for the improvement of transport conditions have been put forward, and it is not within the province of this report to make any suggestions upon the subject, beyond pointing out that it is one which appears to call for careful consideration.

"Finally, there is one definite proposal which has frequently been urged, and that is the desirability of providing some means whereby a constant stream of information as to the commercial and industrial conditions of Australia and the needs of its markets (in general and in detail) may be made readily available for British manufacturers. Emphasis is laid upon the services which German and American Consuls have rendered in this way to the merchants and manufacturers of their respective countries, and it is urged the appointment in Australia of a number of competent commercial correspondents of the Board of Trade, together with occasional visits of special commissioners, could be of substantial service to British interests. It is satisfactory to know that already steps are being taken in this direction, and that proposals were laid before the Colonial Conference with a view to the organisation of a system of Imperial commercial representation which will undoubtedly help to meet a widespread desire."

§ 11. Imports of Dutiable and Free Goods.

1. **Classified Statement of Imports.**—The following table shews, classified according to their nature, and distinguishing between dutiable and free goods, the estimated value of imports entered for home consumption during 1906, together with the amount and equivalent *ad valorem* rates of duty collected thereon. As no record is made of the value, entered for home consumption, of goods subject to specific duties, the value has been estimated on the basis of the value of corresponding imports. The free goods entered for home consumption have been taken to be the total imports of free goods, less the amount of the similar goods re-exported.

The high average rate of duty in class II., foodstuffs, is due to the duty on sugar, equivalent to an *ad valorem* rate of nearly 60 per cent. In class VIII., vegetable substances, the high average rate of duty is similarly due to starch. The import duty on starch in 1906 was twopence per lb., equivalent to an *ad valorem* rate of 85 per cent. Sugar and starch of local manufacture are subject to excise duty, hence the measure of the protective effect of the duty is the difference between the import and excise duties.

VALUE OF GOODS ENTERED FOR CONSUMPTION AND DUTY COLLECTED THEREON, 1906.

	Classification of Imports.	Value Entered for Consumption.			Duty Collected, less Refunds.	Equivalent *ad valorem* rate per cent. on—	
		Dutiable.	Free Net Imports.	Total.		Dutiable Imports.	All Imports.
		£	£	£	£		
I.	Foodstuffs of animal origin (excluding living animals)	645,188	53,052	698,190	140,505	21.78	20.12
II.	Foodstuffs of vegetable origin and salt	1,512,843	9,322	1,522,165	632,565	41.81	41.56
III.	Beverages (non-alcoholic) & substances used in making	308,298	853,409	1,161,707	46,069	14.94	3.97
IV.	Spirits & alcoholic liquors, including industrial spirits and pharmaceutical preparations dutiable as spirits	1,393,144	-	1,393,144	2,134,650	153.23	153.23
V.	Tobacco and preparations thereof	549,751	—	549,751	927,086	168.65	168.65
VI.	Live animals	—	115,194	115,194	—	—	—
VII.	Animal substances (mainly unmanufactured) not foodstuffs	144,076	301,423	445,499	14,630	10.15	3.28
VIII	Vegetable substances and fibres	21,047	681,037	702,084	13,172	62.58	1.88
IX.	Apparel, textiles, and manufactured fibres	11,259,164	2,260,454	13,519,618	1,578,141	14.02	11.67
X.	Oils, fats, and waxes ...	505,030	508,688	1,013,718	104,899	20.77	10.35
XI.	Paints and varnishes ...	347,673	20,569	368,242	39,379	11.33	10.69
XII.	Stones and minerals used industrially	70,691	22,957	93,648	11,973	16.94	12.78
XIII.	Specie	—	472,344*	472,344	—	—	—
XIV.	Metals (unmanufactured) and ores, including gold and silver	—					
XV.	Metals partly manufactured	—	587,188	587,188	—	—	—
XVI.	Metals manufactured, including machinery ...	4,244,658	3,662,675	7,907,333	524,137	12.35	6.63
XVII.	Leather and manufactures of leather and substitutes therefor, also indiarubber and indiarubber manufactures	663,157	230,975	894,132	101,737	15.34	11.38
XVIII.	Wood and wicker, raw and manufactured	1,257,364	420,015	1,677,379	211,133	16.79	12.59
XIX.	Earthenware, cements, china, glass, & stoneware	687,165	15,721	702,886	142,264	20.70	20.24
XX.	Paper and stationery ...	600,478	1,190,568	1,791,046	133,599	22.25	7.46
XXI.	Jewellery, timepieces, and fancy goods	873,640	165,035	1,038,675	190,522	21.81	18.34
XXII.	Optical, surgical, and scientific instruments ...	175,808	97,597	273,405	32,998	18.77	12.07
XXIII.	Drugs, chemicals, and fertilisers	320,931	1,397,414	1,718,345	71,793	22.38	4.18
XXIV.	Miscellaneous	1,444,196	1,811,078	3,255,274	283,430	19.63	8.71
	Total	27,024,252	14,876,715	41,900,967	7,334,691	27.14	17.51
	Total merchandise, excluding bullion and specie ...	—	—	—	—	27.14	17.59
	Merchandise, excluding stimulants and narcotics	--	--	—	—	17.04	10.75

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* As gold is sent to Australia for minting and exported in the form of specie, the net imports of classes XIII. and XIV. are shewn in combination. The value of imported bullion retained is £205,820.

2. **Comparative Rates of Duty.**—Omitting bullion and specie, the proportion of total merchandise entered for *home consumption* free of duty in the undermentioned countries, and also the equivalent *ad valorem* rates of duty charged, are as follows :—

The above table discloses the fact that the proportion of imports of merchandise admitted free of duty was smaller in Australia in 1906 than in any of the other countries compared therewith, though the differences with Canada and New Zealand are not great. This may result from various causes, for example :—(i) From a possibly more restricted list of free goods in Australia ; (ii.) from a possibly smaller relative demand in other countries for imported manufactured articles mainly constituting the dutiable portion of imports; (iii.) from rates of duty on dutiable goods being (perhaps) so high in other countries as to restrict importation therein.

PROPORTION OF FREE GOODS AND RATES OF IMPORT DUTY.

Country	Commonwealth of Australia.	Canada.	New Zealand.	United States of America.
Year ended	31/12/06	30/6/06	31/12/06	30/6/06
Percentage of free merchandise... ...	35.18	38.91	38.62	45.22
Equivalent *ad valorem* rates of duty on:—	per cent.	per cent.	per cent.	per cent.
Spirits, wines, and malt liquors ...	153.23	163.74	165.28	73.90
Tobacco, and preparations thereof ...	168.65	111.38	151.75	104.40
Other dutiable merchandise	17.04	23.89	22.13	41.13
Other merchandise, dutiable and free ...	10.75	14.46	13.14	21.88
Total dutiable merchandise	27.14	26.84	33.21	44.22
Total merchandise, dutiable and free	17.59	16.39	20.39	24.22

Notwithstanding the wider range, referred to, of dutiable imports, it will be observed that—excluding alcholic liquors and tobacco—the equivalent *ad valorem* rate of duty in Australia was much below the average rate of duty of the other countries named. The lower average rate for Canada on total imports is due to the smaller relative proportion of liquors and tobacco imported into that country, in which connection it may be mentioned that, during 1906, 79 per cent. of the tobacco imported therein was unmanufactured tobacco admitted free of duty, and subject only to excise on manufacture.

§ 12. Trade of the Individual States of the Commonwealth.

1. **Character of Data.**—The following tables shew the trade of each State of the Commonwealth for the quinquennium immediately preceding Federation and for each of the years 1901 to 1906.

Owing to the many differences existing between the statements of trade hitherto published by the various States and by the Commonwealth, and to the frequent alteration of the figures in succeeding editions of the several publications, it is not possible to furnish an exact statement of the trade of the several States. The figures here given, therefore, should be regarded as merely approximate.

2. **Record of Transhipments.**—In order to ensure a correct detailed record of the export trade of the Commonwealth, it has been the practice of the Department of Trade and Customs, since the 1st September, 1903, to record goods transferred by sea from one State to another State of the Commonwealth, for transhipment abroad from the latter State, in the following manner:—

(i.) As an outward interstate transfer from the State from which the goods are originally moved.

(ii.) As an inward interstate transfer to the State in which the goods are transhipped.

(iii.) As an export (oversea) from the State in which the goods are transhipped abroad.

The record thus obtained in each of the several States does not indicate the proportion of the export trade of the Commonwealth actually contributed by each State, nor does it correctly indicate the amount of interstate trade.

In order to obtain a proper record of the trade of each State with oversea countries, and with other States of the Commonwealth, it is necessary to take into account the goods transhipped, not only in, but also from each State. The exact practice may be understood by giving an example. Five thousand tons of copper are, let us suppose, to be exported from Tasmania to Germany, the available oversea ship starting from a New South Wales port. The following records would then be made, viz.:—

(i.) An "outward interstate transfer" of 5000 tons of copper from Tasmania to New South Wales.

(ii.) An "inward interstate transfer" to New South Wales from Tasmania of 5000 tons of copper.

(iii.) An "oversea export" of 5000 tons of copper from New South Wales to Germany.

In this supposed case the trade is virtually, so far as Tasmanian trade is concerned, a direct export from Tasmania to Germany, and forms no essential element of the trade of New South Wales, either interstate or oversea.

3. **Adjustment of Data.**—In the tables hereinafter the necessary adjustments have been made, so far as sea-traffic is concerned. But goods transferred overland from one State to another, and subsequently exported to oversea countries, are at present necessarily included in the exports from the State in which the goods are shipped oversea. In such cases no adjustment is possible, because the necessary data are not available. Moreover, the demands for the supply of information, which would become essential if it were decided to obtain the data, would place a serious additional burden on the mercantile community, while the question whether the magnitude of the general advantage would compensate for the trouble is at least very problematical.

4. **General Results.**—The tables on pp. 526 and 527 give in detail a clear presentation of the progress of trade in each State and in the Commonwealth, and call, therefore, for no special comment. The general result may, perhaps, be best seen by shewing the mean for the quinquennial periods 1896-1900, 1901-5, and for 1906. These shew that the advance has been a substantial one, both in imports and exports, but that while the imports only increased from an average of £61,247,000 for the period 1896-1900 to one of £68,002,000 for the subsequent period, the exports during the same time increased from £67,474,000 to £79,941,000, and that this increase was almost entirely due to oversea exports, which increased from £41,093,000 to £51,238,000. The increase in imports is similarly due to oversea imports:—

TRADE DEVELOPMENT, COMMONWEALTH, 1896 TO 1906.

Development in period ...	... ...	1896-1900.	1901-5.	1906.	1896-1900.	1901-5.	1906.
Mean population ...	in units of 1000 persons	3,636	3,904	4,085	Result per Inhabitant.		
" oversea imports...	" £1000 ...	33,763	39,258	44,744	£9 5 8	£10 1 1	£10 19 1
" " exports...	" " ...	41,093	51,238	69,738	11 6 1	13 2 6	17 1 4
" interstate imports	" " ...	27,484	28,744	38,214	7 11 2	7 7 3	9 7 1
" " exports	" " ...	26,381	28,703	38,214	7 5 1	7 7 0	9 7 1
" total imports	" " ...	61,247	68,002	82,958	16 16 10	17 8 4	20 6 2
" " exports	" " ...	67,474	79,941	107,952	18 11 2	20 9 6	26 8 5

IMPORT TRADE OF EACH STATE AND COMMONWEALTH, 1896 TO 1906.

State.	1896-1900.	1901.	1902.	1903.	1904.	1905.	1906.
FROM OVERSEA COUNTRIES.							
	£000.	£000.	£000.	£000.	£000.	£000.	£000.
New South Wales ...	13,866	17,560	15,024	13,978	13,134	14,485	17,604
Victoria	9,824	12,687	12,858	12,340	12,740	12,958	14,870
Queensland	3,488	3,516	3,734	3,250	3,030	3,164	3,748
S.A. (including N.T.)	3,328	3,965	3,157	3,224	3,289	3,232	3,983
Western Australia ...	2,707	3,895	5,171	4,228	4,022	3,769	3,780
Tasmania	550	811	732	791	806	738	759
Commonwealth (Total)	33,763	42,434	40,676	37,811	37,021	38,346	44,744
FROM OTHER COMMONWEALTH STATES (INTERSTATE).							
New South Wales ...	10,116	9,368	10,950	11.949	11,500	11,848	13,703
Victoria	6,782	6,240	5,412	5,254	6,382	8,202	8,926
Queensland	2,676	2,861	3,618	3,481	2,992	3,532	4,560
S.A. (including N.T.)...	3,839	3,453	2,972	3,494	4,160	5,204	5.714
Western Australia ...	3,011	2,559	2,047	2,541	2,651	2,712	3,040
Tasmania	1,060	1,154	1,710	1,803	1,759	1,914	2,271
Total	27,484	25,635	26,709	28,522	29,443	33.412	38.214
TOTAL (OVERSEA AND INTERSTATE).							
New South Wales ...	23,982	26,928	25,974	25,927	24,634	26,333	31,307
Victoria	16,606	18,927	18,270	17,594	19,122	21.160	23,796
Queensland	6,164	6,377	7.352	6,731	6,022	6,696	8,308
S.A. (including N.T.)...	7,167	7,418	6,129	6,718	7,449	8,436	9,697
Western Australia ...	5,718	6.454	7,218	6,769	6,673	6,481	6,820
Tasmania	1,610	1,965	2,442	2,594	2,565	2,652	3.030
Total	61,247	68,069	67,385	66,333	66,464	71,758	82,958

IMPORTS PER INHABITANT, 1896 TO 1906.

FROM OVERSEA COUNTRIES.

	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
New South Wales ...	10	12	3	12	7	7	10	16	0	9	17	6	9	2	1	9	16	6	11	13	2
Victoria	8	5	10	10	10	10	10	12	5	10	4	2	10	11	0	10	13	9	12	3	0
Queensland	7	8	9	7	0	4	7	6	6	6	6	10	5	16	9	6	0	4	7	0	9
S.A. (including N.T.)...	9	7	5	10	18	7	8	13	2	8	16	3	8	18	0	8	12	7	10	9	8
Western Australia ...	17	9	6	20	13	4	25	2	5	19	2	0	17	0	0	15	1	2	14	10	11
Tasmania	3	6	5	4	14	2	4	4	2	4	9	2	4	10	2	4	2	5	4	4	11
Commonwealth (Total)	9	5	8	11	3	9	10	11	0	9	13	10	9	7	3	9	10	11	10	19	1
FROM OTHER STATES (INTERSTATE).																					
New South Wales ...	7	14	10	6	17	5	7	17	5	8	8	10	7	19	6	8	0	9	9	1	6
Victoria	5	14	6	5	3	8	4	9	5	4	6	11	5	5	9	6	15	4	7	5	11
Queensland	5	14	1	5	14	2	7	2	0	6	15	10	5	15	3	6	14	9	8	11	2
S.A. (including N.T.)...	10	16	3	9	10	4	8	3	1	9	11	0	11	5	1	13	17	10	15	0	10
Western Australia ...	19	8	8	13	11	7	9	18	11	11	9	7	11	4	1	10	16	8	11	14	0
Tasmania	6	8	1	6	13	10	9	16	7	10	3	2	9	16	10	10	13	7	12	14	0
Total	7	11	2	6	15	2	6	18	7	7	6	3	7	8	11	8	6	5	9	7	1
TOTAL (OVERSEA AND INTERSTATE).																					
New South Wales ...	18	7	1	19	15	0	18	13	5	18	7	1	17	1	7	17	17	3	20	14	8
Victoria	14	0	4	15	14	6	15	1	10	14	11	1	15	16	9	17	9	1	19	8	11
Queensland ...	13	2	10	12	14	[illegible]	14	8	[illegible]	13	2	8	11	12	0	12	14	9	15	11	11
S.A. (including N.T.)...	20	3	8	20	8	11	16	16	3	18	7	3	20	3	1	22	10	5	25	10	6
Western Australia ...	36	18	2	34	4	11	35	1	4	30	11	7	28	4	1	25	17	10	26	4	11
Tasmania	9	14	[illegible]	11	8	0	14	0	[illegible]	14	12	4	14	7	0	14	16	0	16	18	11
Total	16	16	10	17	18	11	17	9	7	17	0	1	16	16	2	17	17	4	20	6	2

EXPORT TRADE OF EACH STATE OF THE COMMONWEALTH, 1896 TO 1900.

State.	1896-1900.	1901.	1902.	1903.	1904.	1905.	1906.
TO OVERSEA COUNTRIES.							
	£000.	£000.	£000.	£000.	£000.	£000.	£000.
New South Wales ...	17,656	18,210	15,975	18,103	20,482	21,440	27,641
Victoria	11,303	13,075	10,369	10,959	15,308	12,992	16,838
Queensland	4,237	4,334	4,108	4,203	4,391	4,992	5,759
S.A. (including N.T.)	4,130	4,462	3,766	3,898	5,619	6,428	8,043
Western Australia ...	2,984	7,941	8,253	9,462	9,916	9,070	9,012
Tasmania	783	1,674	1,444	1,625	1,770	1,919	2,445
Commonwealth (Total)	41,093	49,696	43,915	48,250	57,486	56,841	69,738
TO OTHER COMMONWEALTH STATES (INTERSTATE).							
New South Wales ...	8,548	9,140	7,569	7,872	9,870	12,225	14,639
Victoria	5,257	5.571	7.841	8,483	8,097	8,588	10,626
Queensland	5,890	4,916	5,063	5,312	6,839	6,945	6,992
S.A. (including N.T.)	3,530	3,725	4,095	4,545	3,044	3,060	3,884
Western Australia ...	1,893	575	798	863	355	801	765
Tasmania	1,263	1,272	1,801	1,218	1,238	1,793	1,308
Total	26,381	25,199	27,167	28,293	29,443	33,412	38,214
TOTAL (OVERSEA AND INTERSTATE).							
New South Wales ...	26,204	27,350	23.544	25,975	30,352	33,665	42,280
Victoria	16,560	18,646	18,210	19,442	23,405	21,580	27,464
Queensland	10,127	9,250	9,171	9,515	11,230	11,937	12.751
S.A. (including N.T.)	7,660	8,187	7,861	8,443	8,663	9,488	11,927
Western Australia ...	4,877	8,516	9,051	10,325	10,271	9,871	9,777
Tasmania	2,046	2,946	3,245	2,843	3,008	3,712	3,753
Total	67,474	74,895	71,082	76,543	86,929	90,253	107,952

EXPORTS PER INHABITANT, 1896 TO 1906.

TO OVERSEA COUNTRIES.

	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
New South Wales ...	13	10	3	13	7	1	11	9	8	12	15	10	14	4	1	14	10	11	18	6	0
Victoria	9	10	10	10	17	3	8	11	4	9	1	4	12	13	7	10	14	4	13	15	2
Queensland	9	0	8	8	12	11	8	1	3	8	4	0	8	9	2	9	9	11	10	16	2
S.A. (including N.T.)	11	12	7	12	5	11	10	6	8	10	13	1	15	4	1	17	3	1	21	3	5
Western Australia ...	19	5	3	42	2	10	40	1	10	42	15	0	41	18	5	36	4	8	34	13	6
Tasmania	4	14	7	9	14	3	8	6	0	9	3	2	9	18	0	10	14	1	13	13	5
Commonwealth (Total)	11	6	1	13	2	1	11	7	9	12	7	4	14	10	10	14	3	0	17	1	4

TO OTHER STATES (INTERSTATE).

	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
New South Wales ...	6	10	10	6	14	1	5	8	10	5	11	3	6	16	11	8	5	10	9	13	10
Victoria	4	8	9	4	12	6	6	9	6	7	0	6	6	14	2	7	1	8	8	13	8
Queensland	12	11	1	9	16	2	9	18	8	10	7	3	13	3	6	13	4	2	13	2	7
S.A. (including N.T.)	9	18	10	10	5	4	11	4	8	12	8	5	8	4	9	8	3	4	10	4	6
Western Australia ...	12	4	4	3	1	0	3	17	6	3	18	0	1	10	0	3	3	11	2	18	10
Tasmania	7	12	7	7	7	7	10	7	1	6	17	3	6	18	5	10	0	1	7	6	3
Total	7	5	1	6	12	11	7	0	11	7	5	0	7	8	11	8	6	5	9	7	1

TOTAL (OVERSEA AND INTERSTATE).

	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
New South Wales ...	20	1	1	20	1	2	16	18	6	18	5	11	21	1	0	22	16	9	27	19	10
Victoria	13	19	7	15	9	9	15	0	10	16	1	10	19	7	9	17	16	0	22	8	10
Queensland	21	11	9	18	9	1	17	19	11	18	11	3	21	12	8	22	14	1	23	18	9
S.A. (including N.T.)	21	11	5	22	11	3	21	11	4	23	1	6	23	8	10	25	6	5	31	7	11
Western Australia ...	31	9	7	45	3	10	43	19	4	46	13	0	43	8	5	39	8	7	37	12	4
Tasmania	12	7	2	17	1	10	18	13	1	16	0	5	16	16	5	20	14	2	20	19	8
Total	18	11	2	19	15	0	18	8	8	19	12	4	21	19	9	22	9	5	26	8	5

SECTION XVI.

SHIPPING.

§ 1. General.

1. Historical.—It has been found impracticable to give a general account of the development of shipping in this issue of the Year Book.

2. Record of Shipping before Federation.—Prior to Federation it was customary for each State to regard the matter of shipping purely from the State standpoint, and vessels arriving from or departing to countries beyond Australia, *via* other Australian States, were recorded as if direct to the oversea country. Thus a mail steamer from the United Kingdom, which made Fremantle her first port of call in Australia, would be recorded not only there, but also again in Adelaide, Melbourne and Sydney, as an arrival from the United Kingdom. Consequently any aggregation, especially of the recent shipping records of the different States, would repeatedly include a large proportion of the shipping visiting Australia. In earlier years, when many vessels sailed from the various State ports direct for their destination, the error of repeated inclusion was less serious, but as the commerce of Australia developed, more and more ports of call were included in the voyage of each vessel, and this made the mere aggregation of State records correspondingly misleading. It has, as a matter of fact, led to some erroneous publications of statistical results and deductions.

3. **Shipping since Federation.**—With the inauguration of the Commonwealth, the statistics of its shipping, especially of its oversea shipping, became of greater intrinsic importance. As an index of the position of Australia among the trading countries of the world, such statistics had a constitutional importance commensurate with Commonwealth interests, and correspondingly greater than those of individual States. And the nationality of the shipping trading with Australia became also a matter of greater moment.

4. **Difficulties of Comparisons of Total Shipping.**—From what was said in paragraph two above, it is obviously impossible to now obtain results for Australia not subject to the defect of repeated inclusions of the same vessels. Unfortunately the statistical records of the first three years of federal history are subject to the same defect, and do not admit of direct comparison with those now kept. A careful estimate of the extent and effect of repeated inclusion has been made and applied for 1901 to 1903, so as to extend the comparative results to those years. It is thought that the error of such estimation will be negligible for comparative purposes.

5. **Present System of Record.**—The present system of record treats Australia as a unit, and counts, therefore, only one entry and one clearance for each visit to the Commonwealth. Repeated voyages of any vessel are of course included.

§ 2. Oversea Shipping.

1. **Total Oversea Shipping.**—In order to extend, as indicated, the comparison of the oversea shipping so as to include the years 1901 to 1903, as well as the succeeding years, an estimate of its probable amount has been made. This estimate is based on a comparison of the results obtained by merely aggregating State statistics with the defect of multiple records, and the results obtained under the present system, which avoids the multiple record.

TOTAL OVERSEA SHIPPING, 1901 TO 1906.

Year.	1901.*	1902.*	1903.*	1904.	1905.	1906.
Vessels	3,890	3,700	3,580	3,700	4,088	4,115
Tons	6,340,000	6,243,000	6,249,000	6,682,011	7,444,417	7,966,657

* The figures for these years have been estimated.

Although, as explained, there is no absolute record for the years prior to 1904, it may be safely affirmed that the tonnage of the oversea shipping of the Commonwealth for the year 1906 has never before been attained. In this respect the shipping returns are in harmony with those relating to trade, which shew the value of oversea trade for 1906 to be the highest yet recorded.

2. **Growth of Oversea Shipping.**—Although as already pointed out the records of the oversea shipping of the Commonwealth do not admit of a direct comparison beyond a period of three years, a fairly accurate measure of the relative increase of shipping during a longer period may be obtained by continuing the method in vogue before 1904, with its defects of multiple record, to the year 1906. This has been done for the quinquennia between 1886 to 1906, the results being as follows :—

AGGREGATE OF OVERSEA SHIPPING, ENTERED AND CLEARED, OF THE SEVERAL STATES OF THE COMMONWEALTH, 1886 TO 1906.

Year.	Vessels.	Tonnage.	Percentage Increase of Tonnage since 1886.	Annual Rate of Increase during each Quinquennial Period.
1886	4,558	4,924,025	100	...
1891	4,838	6,601,173	134	6.04
1896	4,578	7,230,366	147	1.84
1901	6,122	11,761,729	239	10.22
1906	6,367	14,778,441	300	4.67

It will be borne in mind that while the above figures in themselves have no absolute significance, nevertheless, on the assumption that the element of duplication has been in fairly constant ratio for the last twenty years, they furnish the best available indication o the growth of Australian oversea shipping,

3. **Comparison with other Countries.**—The place of Australia among various countries in regard to oversea shipping is indicated in the following table, both absolutely and in respect of tonnage per head of population:—

OVERSEA SHIPPING OF VARIOUS COUNTRIES.

Country.	Year.	Tonnage Entered and Cleared.		Country.	Year.	Tonnage Entered and Cleared.	
		Total.	Per Inhabitant.			Total.	Per Inhabitant.
Argentine Rep. ...	1904	19,648,389	4.0	Japan ...	1905	28,568,908	0.6
Belgium ...	1905	23,170,224	3.3	Natal ...	1906	2,778,113	2.4
Canada ...	1906	15,588,455	2.7	New Zealand	1906	2,481,866	2.8
Cape Colony ...	1906	6,877,324	2.8	Norway ...	1905	8,165,688	3.5
Commonwealth	1906	7,966,658	2.0	Spain ...	1905	33,037,622	1.7
Denmark ...	1905	13,839,942	5.4	Sweden ...	1905	18,183,459	3.4
France ...	1905	44,116,004	1.1	United K'dom	1906	120,790,310	2.8
Germany ...	1905	38,325,260	0.6	United States	1906	54,371,320	0.7
Italy	1905	39,849,276	1.1				

4. **Shipping Communication with various Countries.**—Particulars of the number and tonnage of vessels trading between Australia and various countries, distinguishing British from foreign countries, are given in the following tables, the table on page 530 shewing the tonnage entered and cleared, and that on page 531 the total tonnage, together with the number of vessels entered and cleared, and the total thereof:—

SHIPPING TONNAGE ENTERED AND CLEARED FROM AND TO VARIOUS COUNTRIES.

Country.	1904.		1905.		1906.	
	Tonnage.		Tonnage.		Tonnage.	
	Entered.	Cleared.	Entered.	Cleared.	Entered.	Cleared.
United Kingdom ...	965,420	1,155,731	1,003.226	967,499	997,344	1,024,906
Canada	48,128	30,961	57,499	31,490	64,506	36,483
Cape Colony	215,647	104,253	218,257	120,341	165,691	68,714
Fiji	34,146	52,108	43,625	53,613	48,760	54,167
Hong Kong	45,320	46,096	94,268	117,561	128,480	113,787
India and Ceylon ...	67,193	113,503	75,973	145,479	89,199	143,451
Mauritius	13,027	21,973	24,889	13,469	23,461	23,483
Natal...	70,552	36,579	111,971	50,984	89,360	35,048
New Guinea	26,629	21,056	7,220	7,269	12,046	14,400
New Zealand	584,204	595,203	637,094	751,280	647,862	757,414
South Sea Islands ...	15,285	18,054	25,305	29,404	48,765	38,425
Straits Settlements ...	99,036	80,320	81,791	79,065	118,049	155,004
Other British Countries ...	699	4,390	6,894	2,167	9,801	...
Total British Countries ...	2,185,295	2,280,227	2,388,012	2,369,621	2,443,324	2,465,282
Africa, Portuguese East...	68,865	22,869	58,774	24,935	81,389	14,511
Belgium	5,334	25,638	3,327	37,264	11,062	33,500
Chile	54,268	291,240	45,196	290,491	147,761	403,900
Dutch East Indies ...	21,207	19,658	31,420	23,177	63,258	34,608
France	45,354	44,954	82,054	113,034	76,217	66,756
Germany	200,911	170,860	198,363	186,537	275,676	234,325
Hawaiian Islands ...	8,966	42,706	18,569	79,499	20,787	48,097
Japan	86,416	46,265	156,697	40,004	180,314	54,822
Mexico	27,077	16,191	17,026	28,993	18,201	46,650
New Caledonia ...	55.309	57,737	73,359	76,191	64,296	80,606
Norway	43,912	...	37,322	...	44,894	...
Peru	9,965	37,480	19,123	81,270	25,573	87,641
Philippine Islands ...	41,272	76,583	91,699	116,274	114,897	155,214
South Sea Islands (foreign)	32.156	18,162	19,427	16,846	15,656	13,698
United States	309,416	166,375	391,731	160.733	332,516	120,454
Other Foreign Countries...	43,976	35,367	92,987	74,462	90,324	100,449
Total Foreign Countries...	1,144,404	1,072,085	1,337,074	1,349,710	1,562,821	1,495,231
Total all Countries ...	3,329,699	3,352,312	3,725,086	3,719,331	4,006,145	3,960,513

SHIPPING ENTERED AND CLEARED FROM AND TO VARIOUS COUNTRIES.

Country.	1904.				1905.				1906.			
	Vessels.			Total T'nn'ge.	Vessels.			Total T'nn'ge.	Vessels.			Total T'nn'ge.
	Ent.	Cld.	Tot.		Ent.	Cld.	Tot.		Ent.	Cld.	Tot.	
United Kingdom... ...	309	477	786	2,121,151	326	364	690	1,970,725	307	366	673	2,022,250
Canada	23	13	36	79,089	29	13	42	88,989	32	15	47	100,989
Cape Colony	148	76	224	319,900	140	85	225	338,598	109	58	167	234,405
Fiji	33	47	80	86,254	34	49	83	97,238	41	47	88	102,927
Hong Kong	23	25	48	91,425	47	54	101	211,829	61	53	114	242,267
India and Ceylon ...	28	43	71	180,696	31	54	85	221,452	34	52	86	232,650
Mauritius	10	16	26	35,000	19	12	31	38,358	20	20	40	46,944
Natal	49	20	69	107,131	62	22	84	162,955	49	17	66	124,408
New Guinea	105	96	201	47,685	89	89	178	14,489	78	79	157	26,446
New Zealand	413	393	806	1,179,407	454	468	922	1,388,374	435	450	885	1,405,276
South Sea Islands ...	12	19	31	33,339	23	37	60	54,709	56	55	111	87,190
Straits Settlements ...	58	47	105	179,356	46	47	93	160,856	63	78	141	273,053
Other British Countries ...	1	2	3	5,089	4	1	5	9,061	7	...	7	9,801
Total British Countries	1,212	1,274	2,486	4,465,522	1,304	1,295	2,599	4,757,633	1,292	1,290	2,582	4,908,606
Africa, Portuguese East ...	48	12	60	91,784	39	11	50	83,709	56	8	64	95,900
Belgium	3	12	15	30,072	1	15	16	40,591	5	12	17	44,562
Chile	29	167	196	345,508	23	168	191	335,637	76	232	308	551,661
Dutch East Indies ...	15	13	28	40,865	24	139	163	54,597	45	41	86	97,866
France	21	19	40	90,308	38	42	80	105,088	32	24	56	142,973
Germany...	66	49	115	371,771	64	54	118	384,900	94	71	165	510,001
Hawaiian Islands ...	5	40	45	51,672	11	51	62	98,068	9	29	38	68,884
Japan	40	23	63	132,681	61	21	82	196,701	68	22	90	235,136
Mexico	13	10	23	43,283	10	16	26	46,019	7	25	32	64,851
New Caledonia	41	43	84	113,046	47	48	95	149,550	41	52	93	144,902
Norway	24	...	24	43,912	26	...	26	37,322	27	...	27	44,894
Peru	7	28	35	47,445	11	54	65	100,393	15	59	74	113,214
Philippine Islands ...	19	36	55	117,855	37	50	87	207,973	47	66	113	270,111
South Sea Islands (foreign)	46	35	81	50,318	38	38	76	36,273	31	29	60	29,354
United States	195	85	280	565,791	180	69	249	552,464	145	50	195	452,970
Other Foreign Countries...	38	27	65	79,343	62	41	103	167,449	53	62	115	190,773
Total Foreign Countries	615	599	1,214	2,216,489	672	817	1,489	2,686,784	751	782	1,533	3,058,052
Total all Countries ...	1,827	1,873	3,700	6,682,011	1,976	2,112	4,088	7,444,417	2,043	2,072	4,115	7,966,658

In respect of these tables it may be pointed out that the statistics for any country do not fully disclose the extent of its shipping communication with particular countries. The reason of this is that vessels are recorded as arriving from, or departing to, a particular country, whereas, as a matter of fact, many regular lines of steamers call and transact business at the ports of several countries in the course of a single voyage. The lines of steamers trading between Australia and Japan, for example, often call at New Guinea, the Philippine Islands, China, etc., but, being intermediate ports, these countries are not referred to in the statistical records.

5. General Trend of Shipping.—A grouping of countries into larger geographical units shews more rapidly the general direction in which Australian shipping has expanded during the past two years. This is illustrated in the tables on page 532.

These tables show that while the increase, with the exception of Africa and North America, has been general, the greatest expansion has been in the direction of Eastern countries. As an examination of the preceding table will shew, Hong Kong, India and Ceylon, Straits Settlements, Dutch East Indies, Japan, and the Philippine Islands, are the countries most concerned. South American countries shew an increase for 1906 of 289,940 tons and 233,018 tons as compared with the years 1904 and 1905 respectively.

Of the increase over 1904, 206,153 tons was with Chile, 65,769 with Peru, and 14,955 with the Argentine Republic. Vessels arriving in Australia from South American ports are almost without exception in ballast.

Shipping with African countries—mainly confined to Cape Colony, Natal, Portuguese East Africa and Madagascar—rose from 565,759 tons in 1904 to 649,802 tons in 1905, but fell to 525,574 tons in 1906. Of the total tonnage entering Australia from African countries 91 per cent., equal to 65 per cent. of the total tonnage between the two continents, was in ballast:—

GENERAL DIRECTION OF THE SHIPPING OF THE COMMONWEALTH.

Countries.		1904.		1905.		1906.	
		Tonnage.		Tonnage.		Tonnage.	
		Entered.	Cleared.	Entered.	Cleared.	Entered.	Cleared.
United Kingdom and European Countries	Cargo...	1,243,845	1,396,385	1,263,010	1,315,543	1,350,946	1,382,948
	Ballast	33,415	4,655	84,364	—	76,946	74
New Zealand	Cargo...	464,404	576,448	505,898	664,411	529,494	712,153
	Ballast	119,800	18,755	131,196	86,869	118,368	45,261
Asiatic Countries and Islands in the Pacific	Cargo...	388,850	565,748	390,154	777,016	479,032	906,065
	Ballast	158,493	28,947	355,994	33,721	466,893	32,998
Africa	Cargo...	44,241	191,881	45,335	220,560	33,348	152,465
	Ballast	323,850	5,787	330,424	3,483	341,761	—
North and Central America...	Cargo...	392,612	218,502	355,821	202,523	372,306	192,590
	Ballast	83,319	1,728	121,402	29,425	42,917	19,807
South America	Cargo...	2,118	343,476	1,714	376,654	2,154	508,972
	Ballast	74,752	—	89,774	9,126	191,980	7,180
Total	Cargo...	2,536,070	3,292,440	2,561,932	3,556,707	2,767,280	3,855,193
	Ballast	793,629	59,872	1,163,154	162,624	1,238,865	106,320
Total	...	3,329,699	3,352,312	3,725,086	3,719,331	4,006,145	3,960,513

TONNAGE—ENTERED AND CLEARED.

Countries.	1904.	1905.	1906.	1906 Compared with—	
				1904.	1905.
United Kingdom & European Countries	2,678,300	2,662,917	2,810,914	+ 132,614	+ 147,997
New Zealand	1,179,407	1,388,374	1,405,276	+ 225,869	+ 16,902
Asiatic Countries & Islands in the Pacific	1,142,038	1,556,885	1,884,988	+ 742,950	+ 328,103
Africa	565,759	649,802	527,574	— 38,185	— 122,228
North and Central America	696,161	709,171	627,620	— 68,541	— 81,551
South America	420,346	477,268	710,286	+ 289,940	+ 233,018
Cargo	5,828,510	6,118,639	6,622,473	+ 793,963	+ 503,834
Ballast	853,501	1,325,778	1,344,185	+ 490,684	+ 18,407
Total	6,682,011	7,444,417	7,966,658	+ 1,284,647	+ 522,241

6. Nationality of Oversea Shipping.—The greater part of the oversea carrying trade of the Commonwealth—72.84 per cent. in 1906—is done by vessels of British nationality, but that the foreign nations have secured a steadily increasing proportion of the Australian trade during the past two years will be readily seen from the following table:—

NATIONALITY OF ALL VESSELS WHICH ENTERED AND CLEARED THE COMMONWEALTH FROM AND TO OVERSEA COUNTRIES, 1904 TO 1906.

Nationality.	Tonnage.			Percentage.		
	1904.	1905.	1906.	1904.	1905.	1906.
BRITISH—						
Australian ...	548,039	569,210	642.422	8.20	7.65	8.06
United Kingdom ...	3,827,883	4,201,185	4,341,502	57.28	56.43	54.50
New Zealand ...	646,287	752,325	800,402	9.67	10.11	10.05
Other British ...	12,813	22,642	18,626	0.20	0.30	0.23
Total British ...	5,035,022	5,545,362	5,802,952	75.35	74.49	72.84
FOREIGN—						
Austrian	9.103	—	9,982	0.14	—	0.12
Danish	11,062	20,310	11,758	0.17	0.27	0.15
Dutch	15,085	19,989	20,392	0.23	0.27	0.26
French	296,179	517,154	475,839	4.43	6.95	5.87
German	597,795	633,197	836,793	8.95	8.51	10.50
Italian	128,575	106,017	81,195	1.92	1.42	1.02
Japanese	14,981	—	61,054	0.22	—	0.77
Norwegian	224,391	263,103	366,978	3.36	3.54	4.61
Russian	44,581	41,033	55,138	0.67	0.55	0.69
Swedish	17.351	29,963	31,085	0.26	0.40	0.39
United States ...	280,198	268,289	208,228	4.19	3.60	2.61
Other Foreign ...	7,668	—	5,264	0.11	—	0.07
Total Foreign ...	1,646,989	1,899,055	2,163,706	24.65	25.51	27.16
Grand Total ...	6,682,011	7.444,417	7,966,658	100	100	100

The tonnage of Australian-owned vessels engaged in the oversea trade represents about 8 per cent. of the total, and the tonnage of New Zealand vessels about 10 per cent. Both are engaged mainly in the trade with New Zealand and eastern countries. An examination of the figures in the above table shews that, of the increase in tonnage in 1906 as compared with 1904, viz., 1,284,647 tons, 767,930 tons (*i.e.*, 59.78 per cent.) was British and 516,717 tons (*i.e.*, 40.22 per cent.) was foreign, and that the increase of 1906 over 1905 was only 49.32 per cent. for British vessels. But to sustain the proportion of British tonnage as in 1904 it was necessary that 75.35 per cent. of the increase should be British. The more important competitors for the Australian shipping trade among the foreign nations are Germany, France, and Norway, and it is therefore of interest to consider the general direction of this trade. It is well to bear in mind, when comparing the figures in the table on the next page, that the French shipping from and to France and to New Caledonia is practically identical with the steamers of the Messageries Maritimes, which maintain a regular service between France and New Caledonia *via* Australian ports, and that the German shipping from and to Germany consists mainly of the vessels of two lines, the Norddeutscher Lloyd, and the German-Australian Steamship Company, which have had regular and frequent services to Australian ports for the past twenty-five years:—

SHIPPING OF PRINCIPAL FOREIGN NATIONS BETWEEN AUSTRALIA AND OTHER COUNTRIES DURING 1906.

Countries.	Nationality.					
	French.		German.		Norwegian.	
	Entered.	Cleared.	Entered.	Cleared.	Entered.	Cleared.
EUROPEAN COUNTRIES—	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
United Kingdom	32,119	47,461	4,385	43,978	3,202	22,029
Belgium	4,262	9,317	4,804	8,849	...	...
France	69,999	43,445	...	3.249	...	...
Germany	2,664	...	250,751	234,325	1,039	...
Norway	...	...	5,235	...	15,865	...
Sweden	...	...	8,273	...	1,754	...
Other European Countries ...	...	...	1,748	...	...	2,044
NEW ZEALAND	9,223	2,932	2,804	2,804	12,037	10,545
ASIATIC COUNTRIES AND ISLANDS IN THE PACIFIC—						
Japan	...	1,779	28,886	21,621	2,296	...
New Caledonia	61,532	73,926	...	...	...	...
Philippine Islands	...	...	2,575	7,539	20,649	20,116
South Sea Islands	...	...	1,927	1,617	8,801	12,065
Straits Settlements ...	...	...	13.290	13,246	7,945	4,729
Other Asiatic Countries ...	15,328	5,236	21,969	10,057	10,608	7,667
AFRICAN COUNTRIES—						
Africa, Portuguese East ...	...	...	10.818	...	16,262	3,769
Cape Colony	8,387	...	12,793	2,782	40,557	40,324
Natal	...	...	6,951	...	6,218	1.565
Other African Countries ...	3,411	...	...	...	11,316	4,047
NTH. AMERICAN COUNTRIES—						
United States	16,510	30,477	3,366	...	9,356	2,419
Other Nth. Amer. Countries...	1,779	...	13,215	...	2,433	4,831
STH. AMERICAN COUNTRIES—						
Chile	12,238	23.814	23,178	49,122	...	28,702
Peru	...	...	3,163	13,544	...	11,716
Other Sth. Amer. Countries...	...	...	779	3,150	8,219	11,853
Total	237,452	238,387	420,910	415,883	178,557	188,421
In ballast	121,666	36.205	100,654	...	128,635	3,555

A further analysis is appended, distinguishing between steam and sailing vessels of British and foreign nationality, which entered and cleared the Commonwealth during the years 1904-6. Steam tonnage during 1906 was 1,422,707 greater than in 1904, 1,000,918 tons (*i.e.*, 70.35 per cent.) of the increase being British, and 421,789 tons (*i.e.*, 29.65 per cent.) being foreign, thus reducing the proportion of British steamers from 83 per cent. in 1904 to 80 per cent. in 1906. The tonnage of sailing vessels shews a decrease during the same period of 138,060 tons, British tonnage falling by 232,988 tons, while that of foreign nations increased by 94,928 tons.

The table on page 535 shews the proportion of steam and sailing vessels engaged in the Australian trade. As might be expected, the proportion of sailing vessels is shewn to be a decreasing one, falling during the period under review from 33 per cent. to 26 per cent. of the total tonnage.

STEAM AND SAILING VESSELS ENTERED AND CLEARED, 1904 TO 1906.

Description and Nationality of Vessels.	1904.			1905.			1906.		
		Percentages.			Percentages.			Percentages.	
	Tonnage.	Total of Kind.	Grand Total.	Tonnage.	Total of Kind.	Grand Total.	Tonnage.	Total of Kind.	Grand Total.
Steam—									
British	3,742,498	83	...	4,368,183	83	...	4,743,416	80	...
Foreign	764,978	17	...	901,202	17	...	1,186,767	20	...
Total steam ...	4,507,476	100	67	5,269,385	100	71	5,930,183	100	74
Sailing—									
British	1,292,524	59	...	1,177,179	54	...	1,059,536	52	...
Foreign	882,011	41	...	997,853	46	...	976,939	48	...
Total sailing ...	2,174,535	100	33	2,175,032	100	29	2,036,475	100	26
Steam and Sailing—									
British	5,035,022	75	...	5,545,362	74	...	5,802,952	73	...
Foreign	1,646,989	25	...	1,899,055	26	...	2,163,706	27	...
Total	6,682,011	100	100	7,444,417	100	100	7,966,658	100	100

7. **Tonnage in Ballast.**—The following table shews the tonnage of oversea vessels which entered and cleared the Commonwealth in ballast during the years 1904-6. Of the total British tonnage which entered during 1906, 27.28 per cent. was in ballast, and of foreign tonnage 39.88 per cent. was in similar condition. Of the total tonnage which entered the Commonwealth during 1906, 30.92 per cent. was in ballast, while of the tonnage cleared 2.66 per cent. only was without cargo:—

TONNAGE ENTERED AND CLEARED IN BALLAST, 1904 TO 1906.

Year.	Entered.			Cleared.		
	British.	Foreign.	Total.	British.	Foreign.	Total.
1904	508,237	285,392	793,629	54,569	5,303	59,872
1905	772,423	390,731	1,163,154	102,890	59,734	162,624
1906	808,190	430,675	1,238,865	65,263	40,057	105,320

PROPORTION OF TOTAL BRITISH AND FOREIGN TONNAGE WHICH ENTERED AND CLEARED IN BALLAST, 1904 TO 1906.

Year.	Entered.			Cleared.		
	British.	Foreign.	Total.	British.	Foreign.	Total.
	per cent.	per cent.	per cent.	per cent.	per cent.	per cent.
1904	20.15	35.35	23.84	2.17	0.63	1.79
1905	27.84	41.08	31.22	3.71	6.30	4.37
1906	27.28	39.88	30.92	2.30	3.70	2.66

Vessels in search of freights arrive in Australia from all parts of the world. The tonnage which entered each State of the Commonwealth, in ballast, during 1906 was as follows:—

TONNAGE OF OVERSEA VESSELS IN BALLAST WHICH ENTERED EACH STATE OF THE COMMONWEALTH DURING THE YEAR 1906.

State	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
Tonnage	845,686	20,830	42,076	162,914	108,035	59,324	1,238,865
Percentage of total ...	68.26	1.68	3.40	13.15	8.72	4.79	100.00

The large exports of coal from New South Wales afford special inducements to vessels in search of freights. During 1906, 845,686 tons, or 68.26 per cent. of all ballast tonnage arriving in Australia, entered in New South Wales, 673,747 tons having entered at the coal port of Newcastle. The heavy exports during 1906 of wheat, wool, and timber have also furnished freights for vessels arriving in ballast in various parts of the Commonwealth.

8. **Shipping at Ports.**—Appended is an abstract of the total shipping tonnage—oversea and coastwise—which entered the more important ports of Australia during the year 1906, together with similar information in regard to some of the ports of New Zealand and of the United Kingdom. The figures for the United Kingdom ports are for the year 1905, the latest available :—

SHIPPING OF PORTS, AUSTRALIA AND VARIOUS COUNTRIES.

Port.	Tonnage Entered.	Port.	Tonnage Entered.
AUSTRALIA—		ENGLAND AND WALES—	
Sydney	5,430,498	London	17,188,947
Melbourne	4,310,914	Liverpool (including Birkenhead) ...	11,015,451
Port Adelaide	2,877,702*		
Newcastle	2,124,279	Cardiff	9,016,262
Brisbane	1,645,422	Newcastle and N. & S. Shields	8,822,498
Fremantle	1,556,444		
Townsville	872,393	Southampton ...	3,502,566
Albany	763,456	Hull	3,296,759
Hobart	684,313	Dover	3,119,918
Geelong	477,228	Newport	2,712,627
Rockhampton	536,771	Sunderland	2,668,573
Mackay	515,252	Middlesborough ...	2,077,865
Cairns	468,271	Blyth	2,005,976
Port Pirie	359,030	Bristol	1,886,596
Bowen	291,336	Swansea	1,652,326
Bunbury	288,462	Manchester	1,647,774
Launceston	243,875	SCOTLAND—	
NEW ZEALAND—		Glasgow	4,038,269
Wellington	2,893,242	Leith	1,787,638
Auckland	1,471,586	IRELAND—	
Lyttelton	1,954,576	Belfast	2,729,907
Dunedin	868,369	Dublin	2,465,610

* Exclusive of coastwise shipping confined to the State of South Australia.

From the figures above it may be seen that the shipping business of the ports of Sydney and Melbourne is only exceeded by that of four ports in the United Kingdom, viz., London, Liverpool, Cardiff, and Newcastle.

9. **Vessels Registered.**—The number and net tonnage of steam and sailing vessels on the registers at the various ports of the Commonwealth at the end of each of the years 1901 to 1906 are as follows:—

VESSELS ON THE REGISTER, 1901 TO 1906.*

Year.	Steam.		Sailing.		Total.	
	Number.	Net Tonnage.	Number.	Net Tonnage.	Number.	Net Tonnage.
1901	943	203,541	1,433	141,722	2,376	345,263
1902	965	208,043	1,483	141,125	2,448	349,168
1903	1,004	219,985	1,578	136,888	2,582	356,873
1904	1,011	223,558	1,700	129,801	2,711	353,359
1905	1,052	222,551	1,690	129,291	2,742	351,842
1906	1,082	238,742	1,644	128,288	2,726	367,030

* Prior to 1904 vessels registered in the Northern Territory of South Australia are not included.

10. **Vessels Built.**—The following table shews the number and net tonnage of steam and sailing vessels built and registered in Australia during the years 1901 to 1906:—

VESSELS BUILT AND REGISTERED, 1901 TO 1906.

Year.	Steam.		Sailing.		Total.	
	Number.	Net Tonnage.	Number.	Net Tonnage.	Number.	Net Tonnage.
1901	16	1,533	35	960	51	2,493
1902	21	1,195	58	1,574	79	2,769
1903	35	1,536	51	1,160	86	2,696
1904	16	730	54	1,079	70	1,809
1905	29	1,375	12	417	41	1,792
1906	28	874	17	1,109	45	1,983

§ 3. Interstate Shipping.

1. **Total Vessels and Tonnage.**—In the following table are shewn the number and tonnage of vessels recorded as having entered each State of the Commonwealth from any other State therein, and similarly the number and tonnage clearing from each State to other Commonwealth States. The table gives results for the quinquennial intervals since 1886. The shipping on the Murray River, between the States of New South Wales, Victoria and South Australia, is not included:—

INTERSTATE SHIPPING, 1886 TO 1906.—NUMBER OF VESSELS.

ENTERED.

State.	1886.	1891.	1896.	1901.	1906.
New South Wales	1,603	1,692	1,470	1,611	1,575
Victoria	1,433	1,525	1,280	1,502	1,561
Queensland	615	376	439	430	478
South Australia and Northern Territory	671	761	1,000	719	838
Western Australia	187	149	520	446	335
Tasmania	576	680	567	713	840
Commonwealth	5,085	5,183	5,276	5,421	5,627

NUMBER OF VESSELS.—CLEARED.

New South Wales	1,402	1,415	1,275	1,473	1,417
Victoria	1,615	1,733	1,380	1,569	1,610
Queensland	712	389	455	395	431
South Australia and Northern Territory	743	865	1,083	826	890
Western Australia	156	158	496	456	363
Tasmania	615	679	573	694	809
Commonwealth	5,243	5,239	5,262	5,413	5,520

TOTAL.

New South Wales	3,005	3,107	2,745	3,084	2,992
Victoria	3,048	3,258	2,660	3,071	3,171
Queensland	1,327	765	894	825	909
South Australia and Northern Territory	1,414	1,626	2,083	1,545	1,728
Western Australia	343	307	1,016	902	698
Tasmania	1,191	1,359	1,140	1,407	1,649
Commonwealth	10,328	10,422	10,538	10,834	11,147

TONNAGE.—ENTERED.

State.	1886.	1891.	1896.	1901.	1906.
New South Wales	1,181,495	1,617,559	1,589,753	2,031,089	2,456,269
Victoria	1,072,381	1,392,818	1,486,624	1,956,900	2,473,771
Queensland	355,930	267,753	343,026	545,469	692,354
South Aust. and N. Territory	455,596	683,095	1,083,632	1,135,714	1,596,957
Western Australia	127,098	237,708	683,918	973,474	968,664
Tasmania	221,061	371,205	281,029	485,023	721,240
Commonwealth	3,413,561	4,570,138	5,467,982	7,127,669	8,909,255

CLEARED.

New South Wales	1,014,900	1,314,339	1,341,635	1,856,501	2,177,496
Victoria	1,257,967	1,692,189	1,599,065	2,038,424	2,617,966
Queensland	411,275	302,723	359,046	440,659	578,561
South Aust. and N. Territory	503,393	854,236	1,231,927	1,377,399	1,787,009
Western Australia	116,101	269,256	687,632	977,846	1,051,629
Tasmania	251,620	352,406	250,557	433,735	636,944
Commonwealth	3,555,256	4,785,149	5,469,862	7,124,564	8,849,605

TOTAL.

New South Wales	2,196,395	2,931,898	2,931,388	3,887,590	4,633,765
Victoria	2,330,348	3,085,007	3,085,689	3,995,324	5,091,737
Queensland	767,205	570,476	702,072	986,128	1,270,915
South Aust. and N. Territory	958,989	1,537,331	2,315,559	2,513,113	3,383,966
Western Australia	243,199	506,964	1,371,550	1,951,320	2,020,293
Tasmania...	472,681	723,611	531,586	918,758	1,358,184
Commonwealth	6,968,817	9,355,287	10,937,844	14,252,233	17,758,860

The figures presented in the above table include oversea vessels—largely mail boats—passing from one State to another. This renders them somewhat unsatisfactory.

In the earlier part of this section attention was drawn to the custom in vogue prior to Federation of recording vessels from or to "oversea countries *via* other Commonwealth States" as ***direct*** from or to the oversea country. At each port in Australia these vessels were, on the inward voyage (to Australia), entered as from the oversea country, and cleared to the next Australian port as "interstate"; on the return journey—the outward voyage—they were entered as "interstate," and cleared as for the oversea country. In order to preserve the continuity of the records of the shipping communication of the several States with oversea countries this method has been followed by the Department of Trade and Customs in continuation of the pre-existing practice, excepting that vessels arriving or departing *via* other Commonwealth States are now so recorded instead of as "direct."

From the above it will be seen that while certain movements of the vessels referred to are included in the interstate shipping, other movements of the same vessels, between the same ports, are not so included.

To ascertain the aggregate movement of shipping between the States during the year 1906, including the total interstate movements of oversea vessels, the figures in the following table must be added to those of the preceding one :—

SHIPPING ENTERED AND CLEARED FROM AND TO OVERSEA COUNTRIES *VIA* OTHER COMMONWEALTH STATES, 1906.

State.	Entered.		Cleared.		Total.	
	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.
New South Wales ...	402	1,267,882	412	1,310,185	814	2,578,067
Victoria	343	1,069,125	370	1,068,459	713	2,137,584
Queensland ...	129	359,913	165	492,236	294	852,149
South Australia ...	171	652,116	140	483,892	311	1,136,008
Western Australia ...	—	—	—	—	—	—
Tasmania	—	..	20	87,975	20	87,975
Commonwealth ...	1,045	3,349,036	1,107	3,442,747	2,152	6,791,783

2. **Total Interstate Movement of Shipping.**—The table hereunder shews the total interstate shipping, including all interstate movements of vessels from and to oversea countries, *via* other Commonwealth States, for the year 1906 :—

TOTAL INTERSTATE MOVEMENT OF SHIPPING, 1906.

State.	Entered.		Cleared.		Total.	
	Vessels.	Tonnage.	Vessels.	Tonnage	Vessels.	Tonnage.
New South Wales ...	1,977	3,724,151	1,829	3,487,681	3,806	7,211,832
Victoria	1,904	3,542,896	1,980	3,686,425	3,884	7,229,321
Queensland	607	1,052,267	596	1,070,797	1,203	2,123,064
South Australia ...	1,009	2,249,073	1,030	2,270,901	2,039	4,519,974
Western Australia ...	335	968,664	363	1,051,629	698	2,020,293
Tasmania	840	721,240	829	724,919	1,669	1,446,159
Commonwealth	6,672	12,258,291	6,627	12,292,352	13,299	24,550,643

The necessary data are not available to enable a similar adjustment to be made for past years.

3. **Vessels Engaged Solely in Interstate Trade.**—The elimination of the element of oversea vessels, included in the interstate shipping returns, cannot be accurately effected; nevertheless a close approximation is furnished if it be assumed that vessels *entered* in the several States as from "oversea countries *via* other Commonwealth States" have really been *cleared* from other States as "interstate," and further, that the vessels *cleared* to "oversea countries *via* other Commonwealth States" have likewise been *entered* elsewhere as "interstate." Applying this suggestion, and also eliminating all interstate movements of oversea vessels, the number and tonnage of vessels engaged solely in the interstate trade during the year 1906 will be found to be:—Entered, 4520 vessels, 5,466,508 tons; cleared, 4475 vessels, 5,500,569 tons; entered and cleared, 8995 vessels, 10,967,077 tons.

This treatment cannot be extended to the individual States, as the records do not disclose the particular relationship of the States concerned.

4. **Interstate and Coastal Services.**—The foundation of the coastal steamship services in Australia dates back to the year 1851, when a regular trade was established between Melbourne and Geelong by the small screw steamer "Express." Early in the fifties a company was formed in Tasmania with a capital of £40,000 for the purpose of purchasing steamboats, and employing them in the carriage of passengers and goods between Hobart and Melbourne. This service was commenced in 1852, and was thus the first regular interstate service in Australia. About this time the great influx of population and the increase in commerce, caused chiefly by the gold discoveries, emphasised the desirability of establishing more regular and quicker means of communication between the principal ports of Australia, and in 1862 the regular interstate service between New South Wales and Victoria was inaugurated by the s.s. "You Yangs," which was put into commission in regular service between Melbourne, Sydney, and Newcastle. In 1875 a company was formed in Adelaide for the purpose of supplying suitable steamers for the requirements of the trade between Adelaide and Melbourne. The first two steamers of the company were named the "South Australian" and the "Victorian," and were small vessels of only 400 tons burthen. From the start success attended these enterprises, and the services thus initiated were rapidly extended and their operations broadened. Numerous other companies were formed to cope with the increasing trade between ports in the Commonwealth, and the companies engaged from time to time added to their fleets of steamers by the acquisition of more modern and rapid vessels, until at the end of the year 1906 the total net tonnage owned by the eleven companies from whom returns have been received amounted to 125,560 tons. A summary of the various mail services carried on during the 1907 is given in Section XVIII. of this work.

The subjoined table gives particulars, so far as they are available, of all steamships engaged in regular interstate or coastal services at the end of each year from 1901 to 1906, inclusive:—

PARTICULARS OF STEAMSHIPS ENGAGED IN REGULAR INTERSTATE AND COASTAL SERVICES IN THE COMMONWEALTH, 1901 TO 1906.

Particulars.		1901.	1902.	1903.	1904.	1905.	1906.
Number of companies making returns		11	11	11	11	11	11
Number of steamships ...	...	113	113	114	113	117	122
Tonnage	Gross	184,574	184,858	193,262	195,057	198,338	207,320
	Net	114,080	113,726	118,514	118,612	120,470	125,560
Horse-power	Nominal	18,237	18,377	18,828	19,031	19,180	20,258
	Indicated	122,519	126,012	133,125	138,422	141,054	149,345
Number of passengers for which licensed to carry	1st class ...	4,617	4,953	5,314	5,536	5,764	6,077
	2nd class and Steerage ...	4,490	4,750	5,494	5,645	5,745	5,906
Complement of Crew	Masters and Officers ...	403	403	408	404	410	431
	Engineers	332	334	342	343	343	360
	Crew	2,875	2,958	3,106	3,153	3,181	3,351

SECTION XVII.

ROADS AND RAILWAYS.

§ 1. Roads and Bridges.

1. **Introduction.**—At the present time but few of the main roads in Australia have the importance which they at one time possessed, for originally they were the main arteries of traffic between the chief towns and ports and the interior, a function which has been greatly modified by the development of railways. Owing to the very limited opportunity for inland water carriage, and the great extent of the Commonwealth, roads are still the sole means by which traffic can be conducted throughout a large part of the interior. They moreover serve as feeders to the railways.

In the early days of colonisation main roads were constructed by convict labour, connecting the settled districts, such as Penrith, Parramatta, and Windsor, with the metropolis of Sydney, but the interior of the country was not open to access until the year 1815, when a track as far as Bathurst was completed under the direction of Governor Macquarie. The construction of this road greatly increased the area available for agricultural and pastoral pursuits by rendering accessible the rich and fertile plains in the vicinity of Bathurst. In the following years settlement spread to such an extent that it was impossible to keep pace in the matter of road-making with the demands of the settlers. For many years the authorities chiefly confined their attention to the maintenance and improvement of the main roads already constructed, and to extending them to the principal centres of settlement, and it was not until the period subsequent to the discovery of gold, when many new routes were opened and the amount of traffic largely increased, that the matter received serious attention at the hands of the State Governments. Most of the early bridges were constructed of stone, and many of them are still in existence. In later years, during the period immediately following the progress of settlement in the interior, bridges were usually constructed of wood, and these have since been replaced, after a life of about twenty-five years. Nearly all the bridges of recent date are of iron or steel. Some of the larger and more modern bridges are notable, being fine examples of engineering skill.

During the latter half of the nineteenth century very great progress was made in all the States in the construction of roads and bridges, so that at the present time there is a considerable network of roads spreading over the occupied regions of the Commonwealth. There are still, however, in the less settled parts, especially in Queensland and Western Australia, vast areas of territory inaccessible by roads, and even in the more thickly populated parts of the Commonwealth new roads and deviations, many of an important character, are required in order to facilitate settlement on the land. At the present time the general policy adopted in the States is to construct necessary roads and bridges, often to serve as feeders to the railway systems by conveying the traffic from country districts to convenient stations along the line. Throughout the Commonwealth there are a number of stock-routes provided with wells and places for watering stock. Particulars as to these routes in the several States are not generally available, except in the case of Western Australia. It is hoped in a future issue to afford fuller information, together with a map shewing these routes. In all the States the control, construction, and maintenance of roads and bridges have been, to a large extent, decentralise and placed in the hands of suitable local bodies.

2. **Expenditure on Roads and Bridges.**—Figures shewing the total expenditure on roads and bridges in the States are not available. The subjoined statement, however, gives the amounts of total loan expenditures by the State Governments up to the 30th June, 1907.

ROADS AND BRIDGES.—TOTAL LOAN EXPENDITURE IN EACH STATE AND IN THE COMMONWEALTH UP TO THE 30TH JUNE, 1907.

State, etc. ...	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	C'wealth.
Expenditure ...	£1,784,582	£175,983	£987,409	£1,464,736	£158,863	£2,430,840	£7,002,413

The following table shews the annual expenditure from loans on roads and bridges by the central Governments in each State and in the Commonwealth for each financial year since 1901 :—

ROADS AND BRIDGES.—TOTAL EXPENDITURE BY STATE GOVERNMENTS FOR YEARS ENDED 30TH JUNE, 1902 TO 1907.

State.	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.
	£	£	£	£	£	£
New South Wales ...	150,777	73,471	47,812	59,019	28,666	11,162
Victoria	47,104	44,770	17,267	14,945	1,919	444
Queensland	...	1,333	...	...	...	...
South Australia ...	185	200	78	...	...	...
Western Australia ...	740	...	...	...	712	15,163
Tasmania	77,536[1]	55,687[1]	39,037[1]	55,302[2]	57,536	75,999
Commonwealth ...	276,342	175,461	104,194	129,267	88,833	102,618

1. For the calendar years 1901, 1902, and 1903 respectively.
2. For the eighteen months ended 30th June, 1905.

The two tables given above shew only a small proportion of the actual expenditure upon roads and bridges in the different States, for the reason that (*a*) there have been large expenditures from revenue, both by the central Governments and by local authorities, and (*b*) the State Governments have in many cases voted grants and subsidies on the amount of rates collected, and have issued loans to local authorities either for the express purpose of the construction of roads and bridges or for the general purpose of public works construction. Returns of expenditure, where available, are given below for each State. Although no revenue is now derived directly from roads and bridges, they are indirectly of great value to the community, forming, next to railways and public lands, the most considerable item of national property.

3. **New South Wales.**—The first Act dealing generally with the subject of roads in New South Wales was passed in 1833, and provided for the construction and improvement of roads and streets throughout the colony. The Governor was authorised to open up new roads, for the purpose of which land could be compulsorily acquired. Main roads were distinguished from parish roads; the former, which were specified in a schedule, were to be maintained and repaired at the public expense, while the latter, which were situated mainly in the County of Cumberland, were to be maintained at the expense of the parishes. The Governor was also authorised to appoint Commissioners to report periodically upon the state of repair of the roads. In 1855 an Act was passed by the New South Wales Government requiring the footways in George and Pitt Streets in Sydney to be paved by the owners of the properties abutting on to those streets. Two years later the Roads Department was created to take over the control, construction, and maintenance of roads and bridges in New South Wales. In the few years immediately following an improved system of road-making was adopted, and great progress is said to have been made in the repair of old roads and in the construction of new ones. The striking reduction in both the time of transit and cost of carriage is apparent in the following statement,[1] which indicates on the whole a saving of about 57 per cent. in time and 54 per cent. in cost.

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[1] See Official Year Book, New South Wales, 1905-6, p. 156.

NEW SOUTH WALES.—COMPARATIVE STATEMENT OF COST OF CARRIAGE OF GOODS BY ROAD, AND TIME OF TRANSIT, 1857 AND 1864.

Main Road.	Distance.	1857.		1864.	
		Time of Transit.	Cost per Ton.	Time of Transit.	Cost per Ton.
	Miles.	Days.	£ s. d.	Days.	£ s. d.
Sydney to Goulburn ...	134	17½	12 5 0	7½	3 15 0
Sydney to Bathurst ...	145	23½	15 10 0	11	6 10 0
Newcastle to Murrurundi ...	119	21	9 0 0	8	6 10 0

Since 1864 the cost of carriage by road, however, has not been further reduced, and the control of roads and bridges, with the exception of municipal roads and certain roads in the vicinity of Sydney, constructed by private road trusts, remained in the hands of the central Government until the year 1906.

(i.) *Administration and Control.* The control of all roads, bridges, and ferries is now regulated by the the Local Government Act, 1906. Under the provisions of this Act the eastern and central divisions of the State are divided into shires and municipalities for the general purposes of local government, for the endowment of which a sum of not less than £150,000 is payable annually out of the consolidated revenue on the basis of a percentage subsidy on the proceeds of the general rates received by the District Councils. These councils are invested with very wide powers, and have the control of all roads, bridges, culverts, and ferries within their district, with the exception of roads which are less than sixty-six feet in width, and which have been laid out by a private individual upon or through his own land. Power is given to construct new roads, to widen or close existing roads, to make by-laws for the regulation of traffic, etc.; in the case of the acquisition of land for the purpose of constructing new roads or of widening existing roads, the provisions of the Roads Act, 1902, are incorporated.

(ii.) *Principal Main Roads.* The four principal main roads in New South Wales run in the same direction as, and are roughly contiguous to, the four State-owned main railway lines. (*a*) *The Southern Road*, 385 miles in length, runs from Sydney to Albury, and before the days of railway construction formed part of the highway over which the interstate traffic between Melbourne and Sydney used to flow. (*b*) *The South Coast Road*, 250 miles long, runs from Campbelltown along the top of the coast range and across the Illawarra district as far as Bega, from which place it extends as a minor road to the southern limits of the State. (*c*) *The Western Road*, 513 miles long, runs through Bathurst, Orange and many other important townships as far as Bourke, on the Darling River. (*d*) *The Northern Road*, 405 miles in length, runs from Morpeth, near Newcastle, as far as Maryland, on the Queensland border.

(iii.) *Length and Classification of Roads and Bridges.* The following tables give the length of roads, the number of culverts, bridges, and ferries, from 1901 to 1906, inclusive:–

NEW SOUTH WALES.—LENGTH OF ROADS, NUMBER OF CULVERTS, BRIDGES, AND FERRIES, 1901 TO 1906.

Year.	Miles of Roads.	Number of Culverts under 20 ft. Span.	Number of Bridges over 20 ft. Span.	Number of Punts, Boats and Ferries.
1900-1	52,472	38,760	2,979	318
1901-2	53,908	39,082	3,251	331
1902-3	53,796	41,286	3,446	454
1903-4	53,892	41,286	3,446	454
1904-5	56,316	41,929	3,508	460
1905-6	57,139	43,564	3,548	457

NEW SOUTH WALES.—CLASSIFICATION OF ROADS ON THE 31ST DECEMBER, 1906.

Classification.	Metalled, Wood-blocked, Ballasted, Gravelled or Corduroyed.	Formed.	Cleared or Drained.	Bush or Untouched Road.	Total.
	Miles.	Miles.	Miles.	Miles.	Miles.
Scheduled (outside municipalities) ...	8,735	5,533	13,102	5,162	32,532
„ (within „) ...	734	117	198	42	1,091
Unclassified (outside „) ...	422	1,202	4,410	9,540	15,574
„ (within „) ...	58	34	57	49	198
Roads under municipal councils ...	2,597	1,373	1,840	1,934	7,744
Total roads in New South Wales ...	12,546	8,259	19,607	16,727	57,139

(iv.) *Expenditure on Roads and Bridges.* The subjoined table shews the total expenditure up to the year 1900, and the annual expenditure for succeeding years to 1905, by the central Government and by road trusts. Returns from local authorities under the Act of 1906 are not yet available:—

NEW SOUTH WALES.—TOTAL AND ANNUAL EXPENDITURE BY ROADS DEPARTMENT AND BY ROAD TRUSTS, 1901 TO 1905.

Year ended 30th June.	Expenditure by Roads Department.			Expenditure by Road Trusts.	Total Expenditure.
	Consolidated Revenue Fund.	Loans.	Total.		
	£	£	£	£	£
From 1857 to 1900 ...	—	—	18,790,410	1,258,027	20,048,437
1901 ...	696,102	130,499	826,601	9,074	835,675
1902 ...	689,398	150,777	840,175	7,817	847,992
1903 ...	591,265	73,471	664,736	6,517	671,253
1904 ...	438,752	47,812	486,564	3,404	489,968
1905 ...	386,872	59,019	445,891	2,132	448,023
Total ...	2,802,389	461,578	22,054,377	1,286,971	23,341,348

4. **Victoria.**—In Victoria a comprehensive system of local government, under which the control of roads and bridges is vested in District Councils, has been in force for many years. In the Imperial Act of Parliament, by which the State of Victoria was constituted a separate colony, there was a provision authorising the Governor to incorporate the inhabitants of each county to form districts for the purpose of local government, and to establish elective District Councils, with power to make by-laws for, *inter alia*, the proper control, construction and maintenance of roads and bridges, which were to be paid for partly out of local tolls and rates. In 1852 a committee was appointed by the Legislative Council to inquire into the state of repair of roads and bridges, and as to how the funds for their construction and repair might be best expended. On the report of this committee was based the first Victorian Act which dealt with local government in country districts. The report contained an interesting account of the state of the country at that time; it pointed out the urgency of providing suitable roads and bridges

as an aid to settlement and development; it emphasised the importance of setting aside more adequate funds for the purpose, and directed attention to the deplorable state of the lines of internal communication. The committee recommended that main lines of roads should be constructed throughout the colony by means of grants from the public revenue, and that toll-gates should be erected on the roads when completed. The following were the lines which it was advised should be first formed as main roads:—*(a)* From Wodonga to Melbourne *via* Kilmore. (*b*) From Melbourne to the Murray River *via* Mount Alexander. (*c*) From Melbourne to Geelong. (*d*) From Melbourne to Portland *via* Bacchus Marsh. (*e*) From Melbourne to Gippsland *via* Brighton and Dandenong. (*f*) From Geelong to Westward, and (*g*) from Geelong to Colac. The committee further recommended the appointment of a Central Road Board to have exclusive powers as to making or improving any new or existing main line of road, and that the Governor should be empowered to declare any part of the colony to be a Road District under the control of an elective District Board of from five to nine members, who were to have power to construct and maintain any new parish or existing cross-road, for which purpose they should be empowered to levy rates. With some slight alterations these recommendations were embodied in the Roads Act of 1853, which established a Central Road Board for the whole State, with an inspector-general and staff, and which also provided for the erection of local road districts under the management of local boards. In 1859 municipalities were established in Victoria, and in 1863 the Roads Districts and Shires Act and the Municipal Corporations Act were passed; these Acts were amended from time to time until they were consolidated by the Local Government Act of 1890, which was in turn amended and consolidated by the Local Government Act of 1903.

(i.) *Administration and Control.* Under the provisions of the last-named Act the absolute property in all land proclaimed as a road, street or highway is vested in the Crown. The control, construction, and maintenance of all roads, streets, and bridges are in the hands of District or Municipal Councils, who are empowered to open new roads, and to close, divert, or increase the width of any existing street or road, provided that no new road less than one chain in width may be opened without the consent of the Minister. Power is also given under certain conditions to reduce the width of any existing road or street to a width of not less than one chain. Where land has been alienated from the Crown, and there is no road to any part of such land from the nearest highway, if the owners of such land desire to have a private road communicating with the highway they may apply to that effect in writing to the council, who may then purchase the necessary land and may open a road not less than thirty-three feet wide, which road will thenceforth be a private road for the use of the persons who applied for the same. The councils are further empowered to make and repair streets, lanes, or passages on private property, or forming means of back access to private property, and may compel the owners of such property to pay the cost of so doing. Footways in front of houses or grounds may be kerbed, flagged, paved, or asphalted, and the owners of such houses or grounds must bear half the cost of so doing. The revenue of the councils is derived from rates which may be either general or extra. The councils are empowered to raise loans for the purpose of making or opening new streets and roads, and for diverting, altering, or increasing the width of streets and roads, provided that the amount of such loan must not exceed ten times the average income of the council during the three years immediately preceding.

(ii.) *General and Local Government Expenditure.* The gross amount expended by the State Government of Victoria on roads and bridges was £7,756,345 up to the end of June, 1900; figures for succeeding years are given in the table below. The annual expenditure from ordinary revenue by municipalities is not returned separately, but is included in Public Works Construction and Maintenance; the subjoined table shews the cost from general revenue of municipalities of private streets, roads, etc., and also shews the amounts of municipal loan expenditure from 1901 to 1906, inclusive.

VICTORIA.—AMOUNTS EXPENDED BY GENERAL GOVERNMENT ON ROADS AND BRIDGES, AND AMOUNTS EXPENDED BY LOCAL AUTHORITIES ON THE FORMATION OF PRIVATE STREETS, ROADS, LANES, ETC., TOGETHER WITH AMOUNTS OF MUNICIPAL LOAN EXPENDITURE ON STREETS, ROADS, AND BRIDGES.

Financial Year.[1]	Annual Expenditure by State Government.	Municipal Loan Expenditure.		Formation of Private Roads, Streets, Lanes, etc.[2]	
		Towns, Cities, and Boroughs.	Shires.	Towns, Cities, and Boroughs.	Shires.
	£	£	£	£	£
1901	72,890	16,844	12,928	18,829	4.521
1902	75,855	13,047	15,656	17,655	4,542
1903	69,200	13,540	12,696	15,279	4,028
1904	42,144	12,929	1.444	15,432	4.072
1905	30,393	21,515	2,560	21,593	2,083
1906	56,145	5,673	8,480	18.237	1,390

1. The financial years of Melbourne and Geelong end on the 31st December and the 31st August respectively; those of all other municipalities on the 30th September.

2. Including the cost of flagging, asphalting footpaths, etc.

5. Queensland.—In Queensland the construction and maintenance of public roads are controlled under a system of local self-government, for the purposes of which the whole State is divided into (*a*) towns and (*b*) shires. The City of Brisbane was constituted a municipality about three months prior to the separation of Queensland from New South Wales in 1859, and a general system of local government was inaugurated in the State in 1878. At the present time the duties, rights, and responsibilities of the local authorities with regard to roads, streets, and bridges are regulated by the Local Authorities Act of 1902. The councils are invested with full powers to open, close, divert, or widen streets, roads, and bridges, and to make by-laws for the regulation of traffic, etc. The members of the councils are elected by the ratepayers, and with the aid of executive officers they undertake the supervision and control of all necessary constructions and improvements of roads and bridges within their district. The rates which the councils are empowered to levy are supplemented by Government grants. Separate returns as to the expenditure by towns and shires on roads and bridges are not available, the amounts being included in the returns of expenditure on public works. The following table shews the total receipts and the expenditure on public works by cities and towns and by shires for each year since the Act of 1902 came into force:—

QUEENSLAND.—TOTAL RECEIPTS AND EXPENDITURE ON PUBLIC WORKS OF CITIES, TOWNS, AND SHIRES, 1903 TO 1906.

Municipality.	Total Receipts.				Expenditure on Public Works.			
	1903.	1904.	1905.	1906.	1903.	1904.	1905.	1906.
	£	£	£	£	£	£	£	£
Cities and towns ..	282,528	293,203	312,510	284,438	184,397	164,099	175,279	161,149
Shires	194,728	181,184	190,838	198,350	132,135	109,393	107,934	131,571
Total	477,256	474,387	503,348	482,788	316,532	273,492	283,213	292,720

6. South Australia.—In South Australia the construction of an extensive main road system was initiated by Sir Henry Young, who was Governor of the colony from 1848 to 1854, and this system provided the principal means of communication between the outlying country and the capital and port before the introduction of railways. By the District Councils Acts, 1887 to 1904, and the Municipal Corporations Acts, 1890 to 1903, a system of local self-government has been extended to all the settled parts of the State, which parts are divided into districts and municipalities under the control of councils. Under the provisions of these Acts and of the Roads Act of 1884 the councils are invested with full powers as to the opening and making of new streets and roads, and the diverting, altering, or increasing the width of existing roads; as to raising, lowering, or altering the ground or soil of any street or road; and as to the construction, purchase, and management of bridges, culverts, ferries, and jetties.

(i.) *Main Roads and District Roads.* All the roads in each district are classified either as main roads or as district roads. Both classes of roads are under the direct control either of Municipal Corporations or of District Councils, but in the case of main roads the expenditure on construction and maintenance is chiefly provided for by Government grants, which are paid into a main road fund, while the expenditure on district roads is paid for out of general rates, and out of subsidies on the amount of such rates, granted by the central Government.

(ii.) *Expenditure by Corporations on Main and District Roads.* The following table shews the expenditure by municipal corporations on both main and district roads during each year from 1901 to 1906 inclusive:—

SOUTH AUSTRALIA.—EXPENDITURE BY CORPORATIONS ON STREETS, ROADS, AND BRIDGES, 1901 TO 1906.

Year.[1]	District Roads.			Main Roads Fund.			
	Total Receipts.	Expenditure.		Receipts.		Expenditure.	
		Construction.	Maintenance.	From Main Road Grants.	Total.	Construction.	Maintenance.
	£	£	£	£	£	£	£
1901 ...	148,872	4,906	50,628	7,403	8,738	159	7,745
1902 ...	159,753	11,671	46,980	5,470	7,249	117	6,580
1903 ...	155,857	3,005	52,539	5,458	6,986	...	6,433
1904[2] ...	158,540	10,235	50,769	5,116	6,559	85	6,109
1905 ...	162,850	17,475	43,245	6,125	8,420	419	7,320
1906 ...	166,097	14,521	48,901	7,028	8,144	192	7,291

1. Up to and including the year 1903 the financial year ended on the 31st December, but after that date ends on the 30th November. 2. For eleven months ended the 30th November.

(iii.) *Expenditure of District Councils on Main and District Roads.* The following table gives similar information with respect to main and district roads under the control of District Councils:—

SOUTH AUSTRALIA.—EXPENDITURE BY DISTRICT COUNCILS ON STREETS, ROADS, AND BRIDGES, 1901 TO 1906.

Year Ended 30th June.	District Roads.			Main Roads Fund.			
	Total Receipts.	Expenditure.		Receipts.		Expenditure.	
		Construction.	Maintenance.	From Main Road Grants.	Total.	Construction.	Maintenance.
	£	£	£	£	£	£	£
1901 ...	147,309	18,026	47,379	72,980	100,077	11,861	67,487
1902 ...	134,780	22,925	43,430	62,990	87,070	6,039	63,084
1903 ...	134,216	20,573	44,070	56,092	74,877	5,766	54,778
1904 ...	140,216	22,682	47.519	54,645	69,868	6,280	49,465
1905 ...	150,309	32,157	37,613	55,799	75,622	4,650	56,448
1906 ...	132,085	24,564	47,502	60,568	63,723	5,293	54,027

7. **Western Australia.**—In Western Australia the construction, maintenance, and management of roads and bridges throughout the State, except those within the boundaries of municipalities, are under the control of District Road Boards, constituted by the Roads Acts 1902 to 1904.

(i.) *District Roads and Bridges.* Under the provisions of these Acts any part of the State, not within a municipality, may be constituted by the Governor-in-Council into a Road District, under the control of a Board of seven members elected by the ratepayers. The Board is invested with full powers for controlling and managing all roads and bridges within the district, and is empowered to make by-laws for the general regulation of traffic, to control the weight of engines and machines permitted to cross any bridge or culvert, to regulate the speed limits of vehicles, lights to be carried by vehicles, the lighting of streets and roads, and the licensing of bicycles and motor cars. A District Road Board may not, however, construct any road or street less than sixty-six feet wide without the consent of the Governor, nor any bridge or culvert at a greater cost than £100, except by the direction of the Minister. The construction of the more important bridges and culverts is generally carried out by the Government, the work, after completion, being handed over to the Road Board for maintenance. In case of land being required for the purpose of constructing a new street or road, or for widening an existing street or road, the provisions of the Public Works Act of 1902 are incorporated in the Roads Acts. A Board may levy general rates within its district not exceeding one shilling and sixpence in the £ on the annual ratable value, and, if valued on the basis of unimproved values of lands, the general rate must not exceed twopence half-penny in the £ on the capital unimproved value. Boards are also empowered to raise loans for the purpose of constructing new roads, but the amount of such loans must not be greater than ten times the average amount of general rates collected for two years. For the purpose of paying the interest on money borrowed a Board may levy a special rate not exceeding one shilling and sixpence in the £. District Road Boards may also exercise the powers of Drainage Boards under the provisions of the Land Drainage Act of 1900.

(ii.) *Municipal Streets, Roads, and Bridges.* As regards roads, streets, and bridges within municipalities, these are under the control of local authorities elected under the provisions of the Municipal Corporations Act 1906. The municipal councils are invested with full powers for making, maintaining, and managing all streets, roads, and bridges within the municipal area, and may request the Governor to declare any such land reserved, used, or by purchase or exchange acquired for a street or way, to be a public highway, and on such request the Governor may, by notice in the *Gazette*, proclaim such highway absolutely dedicated to the public.

(iii.) *Stock Routes.* Although the road districts cover a considerable area, amounting in all to about one million square miles, there are still vast tracts of country in Western Australia inaccessible by road. For the purpose of travelling stock in the less settled parts of the State stock-routes have been provided and placed under the control of the Public Works Department. These routes are six in number, and are as follows:—(*a*) *The Kimberley-De Grey Stock Route*, starting about twenty miles south of Derby, runs as far as Broome, and continues thence in a south-westerly direction to the De Grey River. The route is about 350 miles in length, and follows the sea-coast at a distance of from two to ten miles along that part known as the Ninety-mile Beach. There are forty wells, as a rule from ten to fifteen miles apart. (*b*) *The De Grey-Peak Hill Route* starts from Pardoo, the junction of the Kimberley-De Grey and De Grey-Mingenew routes, and runs alongside of the De Grey River for about 100 miles, when it turns south for another 100 miles as far as Nullagine. (*c*) *The De Grey-Mingenew Route* commences at Pardoo and runs in a south-westerly direction for about 250 miles to the Fortescue River, where it turns south and runs irregularly to Mingenew, on the Midland Railway. This route is over 900 miles long. There are about eighty wells, in addition to permanent pools in the river beds, no watering stations being more than about fifteen miles apart. (*d*) *The Fortescue-Cue Route* runs from the Fortescue River to Cue, and is about 400 miles long. (*e*) *The Peak Hill-Leonora Route* starts from the Murchison, at the termination of the De Grey-Peak Hill route, and runs in a south-easterly direction to

Leonora; it is about 300 miles long and has about thirty wells. (*f*) *The Coolgardie-Eucla Route* is about 500 miles in length. In 1903 an artesian bore was put down at Madura by the Public Works Department, 2001 feet deep, with a flow of 70,000 gallons a day.

(iv.) *Length of Roads, Number of Bridges, and Expenditure on Roads and Bridges.* The following table gives particulars of the operations of the Road District Boards since the 1st January, 1903, when the Roads Act of 1902 came into force:—

WESTERN AUSTRALIA.—PARTICULARS OF ROADS UNDER CONTROL OF DISTRICT ROAD BOARDS UNDER THE ROADS ACTS 1902 AND 1904.

Year ended the 30th June.	Area.	Revenue.				Expenditure.	Length of Roads.				No. of Bridges and Culverts.	
		From General Rates.	From Grants and Subsidies.	From other Sources.	Total.		Cleared only.	Formed only.	Metalled or otherwise Constructed.	Total.	Bridges.	Culverts.
	Sq. m.	£	£	£	£	£	Miles.	Miles.	Miles.	Miles.	No.	No.
1904[1]	976,006	18,593	141,409	16,139	176,141	126,736	6,498	2,625	1,395	10,518	287	2,745
1905	975,802	23,558	90,475	11,547	125,580	122,091	8,268	2,864	1,813	12,945	319	3,272
1906	975,792	28,219	85,280	12,746	126,245	125,616	8,556[2]	3,970[2]	1,952[2]	14,478[2]	443[3]	3,792[3]

1. The returns given for 1904 cover a period of eighteen months, from the 1st January, 1903, to the 30th June, 1904. 2. Exclusive of four Boards which have not supplied the information. 3. Exclusive of three Boards which have not supplied the information.

The following table gives similar information with reference to roads under the control of municipalities:—

WESTERN AUSTRALIA.—PARTICULARS OF STREETS, ROADS, AND BRIDGES UNDER THE CONTROL OF MUNICIPALITIES UNDER THE MUNICIPAL INSTITUTIONS ACTS, 1900 AND 1904.

Year ended the 31st October.	No. of Municipalit's.	Length of Streets, Roads, and Bridges.					Revenue.		Expenditure.	
		Paved, M't'll'd or Gr'v'lld	Form'd only.	Clear'd only.	Not Clear'd	Total.	From Rates.	From Grants.	Works and Impr'v-ments.	Street Light'g and Wat'r'g
		Miles.	Miles.	Miles.	Miles.	Miles.	£	£	£	£
1901[1]	42	195	30	149	137	511	78,021	66,850	111,256	15,969
1902	44	265	52	221	249	787	94,894	81,436	125,721	19,484
1903	44	291	55	282	227	855	104,760	80,938	142,347	20,745
1904	43	325	64	252	260	901	119,110	90,868	187,747	23,361
1905	43	354	74	258	256	942	130,575	85,798	183,226	25,404
1906	45	396	79	275	292[2]	1,042	146,206	95,997	165.421	31,045

1. Returns incomplete, not having been furnished when asked for. 2. Exclusive of three municipalities, which have not supplied the information.

8. **Tasmania.**—In 1869 a Roads Act was passed in Tasmania empowering the Governor-in-Council to declare any portion of the colony to be a Road District under the control of a road trust consisting of from five to seven members elected by the landowners. The trustees were invested with full control of all cross and by roads, but could not construct any road less than sixty-six feet wide without the consent of the proprietors on each side. Under the provisions of the Main Roads Act, 1880, the Minister of Lands and Works for the time being was appointed Commissioner of Main Roads, and was invested with the supervision of all main roads and bridges except those situated in municipalities, which were first constituted by the Rural Municipalities Act of 1858, and also excepting those within road districts under the Act of 1869. The trustees of road districts were appointed to act as Main Road Boards. In 1884 previous enactments were repealed and their provisions were amended and consolidated by the Roads Act of that year; under this Act Main Road Boards were established. In 1906 both Road Trusts and Main Road Boards were abolished

by the Local Government Act, which, however, specially provided that the councils of all municipalities constituted under the Act shall exercise all powers conferred upon, and shall be liable to all the obligations imposed upon Road District Trusts and Main Road Boards by the Roads Act of 1884. The whole State, with the exception of Hobart and Launceston, is divided into municipal districts, each of which is under the control of a warden and councillors, and each of which is deemed to be a road district and a main road district for the purposes of the Roads Act 1884.

(i.) *Cross Roads.* Under the provisions of the Roads Act of 1884 the Governor-in-Council was empowered to declare from time to time by proclamation any part of the State to be a Road District for the purpose of the Act, and any such district was to be under the control of a Road Trust, the members of which were elected by the landholders in the district. The trustees were empowered to construct, maintain, and regulate all cross-roads within their district, cross-roads being defined to comprise the following roads:—(*a*) Any road leading from one town to another. (*b*) Any road leading from a town or public bridge to a main road. (*c*) Any road leading from a town to a navigable river. (*d*) Any road which may be proclaimed by the Governor as a cross-road. (*e*) All streets within a town, excepting those in any town in any rural municipality, which were under the control of municipal councils. The annual expenditure of Road Trusts was provided for partly by rates which they were empowered to levy, and partly by Government grants.

(ii.) *Main Roads.* Under the Act of 1884 main roads were from time to time determined by Parliament, and the Minister for Lands and Works was *ex officio* Commissioner of Main Roads. The powers and duties of this officer have not been altered by the Local Government Act of 1906. Municipal Councils and Road District Trusts were constituted Main Road Boards for all main roads situate in or passing through their district, with the exception of the main road from Hobart to Launceston, and for all bridges except those specified in the schedule to the Act. The Commissioner or any Main Road Board, subject to the authority of the Governor-in-Council, might, after a main road had been declared by law, take land required for such road, and might open a new road through the same. All powers, duties, and functions conferred by the Act upon any Main Road Board could be exercised by the Commissioner in respect of the main road from Hobart to Launceston, the bridges specified in the schedule to the Act, and all main roads not situated in any main road district. The expenditure on main roads was provided for by funds voted by Parliament by means of Main Roads Maintenance Acts.

(iii.) *Boards under the Land Act, 1903.* It is provided by the Lands Act of 1903, that as soon as 500 acres of first-class agricultural land have been taken up in one locality, and in not less than five lots, the Governor shall, for the purpose of making roads, bridges, or drains in the vicinity of the land so taken up, raise a sum equal to ten shillings an acre for every acre so taken up, by the issue and sale of debenture stock chargeable on the Consolidated Revenue Fund. The Governor is authorised to raise in the same manner a sum of money not exceeding five shillings for every acre of second-class land sold, and not exceeding two shillings and sixpence for every acre of third-class land sold, for similar purposes. With respect to the sale of lands within any town, not being within a mining area, of a value of not less than £250, the Governor may, for the purpose of making streets, roads, or other improvements in the vicinity of the land so sold, raise a sum equal to ten shillings for every pound of the value of such land, by the issue and sale of debenture stock as above. Provision is also made for the Commissioner of Roads, or for such other person as the Governor may appoint, to purchase and take any lands which he may deem necessary for the purpose of constructing roads or other public works.

(iv.) *Mileage of Main and Other Roads and Expenditure of Main Road Boards and Road Trusts, 1901 to 1906.* The subjoined table gives particulars as to lengths of roads open and as to the expenditure of Main Road Boards and Road Trusts, during the years 1901 to 1906 inclusive. Returns from municipal councils under the Local Government Act of 1906 are not yet available :—

TASMANIA.—LENGTH OF ROADS AND EXPENDITURE OF MAIN ROAD BOARDS AND ROAD TRUSTS, 1901 TO 1906.

Year.	Main Road Boards.		District Road Trusts.			
	Mileage Maintained.	Expenditure.	Number of Trusts.	Miles under Control.	Receipts.	Expenditure.
	Miles.	£	No.	Miles.	£	£
1901	696	7,591	102	6,539	28,887	26,263
1902	765	7,661	102	6,732	29,944	27,579
1903	650¾	8,805	105	6,855	25,359	30,368
1904	650	6,954	104	7,045	29,638	29,459
1905	678	7,028	104	7,124	30,063	28,566
1906	678¾	8,025	105	7,272	31,791	31,633

§ 2. Railways.

1. **Introduction.**—Although it was early recognised that railway construction was essential to the proper development and settlement, and to the future commercial prosperity of a large country like Australia, ill supplied with navigable rivers, the progress made in opening up lines during the twenty years which followed the completion of the first line in 1855, was very slow. This was no doubt due partly to the difficulty of borrowing money at a reasonable rate of interest, owing to the depreciation of Australian securities in London, and partly to the sparseness of the population, which it was feared would not justify the necessary expenditure. In the vicinity of Sydney, also, the ranges of mountains in the districts near the coast had to be either traversed or pierced by tunnels at a considerable expenditure of time and money, thus retarding the expansion of the railway systems which have their starting point at that city. Since the year 1875, however, greater activity in the construction of railways has been manifested, and satisfactory progress has been made in all the States of the Commonwealth; the State Governments now fully recognise the great importance to the community of carrying on the work of construction, and of conducting the administration and management of the railways on businesslike principles, free from undue political influence, and yet with regard to the general development of the country.

2. **Railway Communication in the Commonwealth.**—In the eastern, south-eastern, and southern parts of Australia there now exists a considerable network of railway lines converging from the various agricultural, pastoral and mining districts towards the principal ports, which are themselves connected by systems of lines running roughly parallel to the coast. These are shewn on the accompanying map. In the east, lines radiating from Rockhampton, Brisbane, and Sydney, extend inland in various directions for distances ranging up to over 600 miles; in the south-east there are numerous lines, those in Victoria converging towards Melbourne, while others in New South Wales have their terminus in Sydney; in the south there are three main lines, with numerous branches, running from Melbourne, while from Adelaide one main line, with several branches, runs inland in a northerly direction for a distance of nearly 700 miles, and another line runs in a south-easterly direction to meet the main line from Melbourne on the border of South Australia and Victoria. In addition to these main lines and their numerous branches, there are extensive suburban systems in Melbourne, and some of the other cities of Australia, a considerable portion of the suburban traffic in Sydney being conducted by means of electric tramways. All these lines which have just been referred to are connected together by the main interstate line, which permits of direct communication between the four capital towns—Brisbane, Sydney, Melbourne, and Adelaide—a distance from end to end of 1790¼ miles. The journey from Brisbane to Adelaide by rail occupies just over three days, including one stop of 8 hours 40 minutes at Sydney, and another of 3 hours 50 minutes at Melbourne; the distance between the capitals, and the times occupied are as follows:—

Brisbane to Sydney	... ...	725	miles	... 28 hours.	
Sydney to Melbourne	... ...	582½	,,	... 17 ,,	
Melbourne to Adelaide	... ...	482¾	,,	... 17 ,,	15 mins.

The longest railway journey which can be undertaken in Australia, on one continuous line of railway, is from Longreach in Queensland to Oodnadatta in South Australia, a total distance of 3303 miles. In Western Australia there are a number of lines connecting the main coastal towns, and running inland to the goldfields for nearly 600 miles. In the northern parts of Queensland and in the Northern Territory there are also a number of disconnected lines running inland from the more important ports. In Tasmania the principal towns are connected by a system of lines, and there are also, more especially in the western districts, several lines which have been constructed for the purpose of opening up mining districts.

3. **Mileage Open for Traffic.**—In all the States of the Commonwealth the principle that the control, construction, and maintenance of the railways should be in the hands of the Government has long been adhered to, excepting in cases presenting unusual circumstances. In various parts of the Commonwealth lines have been constructed and managed by private companies, but at the present time practically the whole of the railway traffic in the Commonwealth is in the hands of the various State Governments. The majority of the private lines which are at present running have been laid down for the purpose of opening up forest lands or mining districts, and are not generally used for the conveyance of passengers or the public conveyance of goods. (See paragraph 14, *infra. Particulars of Private Lines.*)

(i.) *Mileage of Government and Private Lines, 1855 to 1907.* The subjoined table shews the mileage of both Government and private lines open for traffic (exclusive of sidings and cross-overs) in each State and also in the Commonwealth at suitable periods since the inauguration of railways in Australia in 1855 up to the year 1907. The figures from 1855 to 1881 are given as up to the end of the calendar year; later figures are as up to the end of the financial year ended on the 30th June, unless otherwise stated, excepting the mileages for private lines which are in all cases taken for the calendar year:—

GOVERNMENT AND PRIVATE RAILWAYS.—MILEAGE OF LINES OPEN FOR TRAFFIC, 1855 TO 1907:

State.	1855.	1861.	1871.	1881.	1890-1.	1900-1.	1905-6.	1906-7.
	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
New South Wales	14	73	358	1,040	2,263	2,926	3,471	3,534
Victoria ...	2½	114	276	1,247	2,764	3,238	3,394	3,396
Queensland ...	*	*	218	800	2,205	2,904	3,240	3,240
South Australia ...	†6¾	56	133	845	1,666	1,736	1,780	1,866
Northern Territory	*	*	*	*	145½	145½	145½	145½
Western Australia	*	*	*	92	‡657	1,990	2,306	2,458½
Tasmania ...	*	*	45	168	‡425	§618	618	618
Commonwealth ...	23¼	243	1,030	4,192	10,135½	13,557½	14,954½	15,258

* No railways yet constructed. † To the 31st December. This line between Goolwa and Port Elliot was opened in 1854 as a horse tramway, but now forms part of the railway system. ‡ To the 31st December, 1891. § To the 31st December, 1901.

It will be seen from the above table that the rate of construction up to the year 1871 was very slow, the average annual length of lines opened from 1861 to 1871 being only 78¾ miles for the whole Commonwealth. By the middle of the following decade, however, the principal mountain ranges had been crossed, and the work of construction could be proceeded with at a greater rate, and at a less cost per mile. The greatest period of activity was from 1881 to 1891, when the average annual length opened for traffic was 594 miles for the whole Commonwealth; the corresponding figures for the following periods from June, 1891, to June, 1901, and from June, 1901, to June, 1906, were 342 miles and 276 miles respectively.

(iii.) *Government Lines, 1901 to 1907.* The following table shews the length of Government railways open for traffic on the 30th June in each year since the inception of the Commonwealth :—

GOVERNMENT RAILWAYS.—MILEAGE OPEN FOR TRAFFIC ON THE 30TH JUNE IN EACH YEAR FROM 1901 TO 1907, INCLUSIVE.

State.	1901.	1902.	1903.	1904.	1905.	1906.	1907.
	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
New South Wales ...	2,845½	3,026	3,138½	3,281	3,281	3,390	3,453
Victoria	3,237	3,302	3,383	3,381	3,394	3,394	3,396
Queensland	2,801	2,801	2,711	2,928	3,092	3,137	3,137
South Australia ...	1,736	1,736	1,736	1,736	1,745½	1,745½	1,831½
Northern Territory ...	145½	145½	145½	145½	145½	145½	145½
Western Australia ...	1,355	1,360	1,516	1,541	1,605	1,611½	1,764
Tasmania	*457½	*462	*462	462	462½	462½	462½
Commonwealth ...	12,577½	12,832½	13,092	13,474½	13,725½	13,886	14,189½

* To the 31st December.

4. **Average Mileage Worked, Train Miles Run, Number of Passenger Journeys, and Tonnage of Goods and Live Stock Carried on Government Railways, 1901 to 1907.**—The preceding table gives the actual mileage open for traffic at the end of each financial year, but, in considering the returns relating to revenue and expenditure and other matters, it is desirable to know the average number of miles actually worked during each year. The next table shews the average number of miles worked, the total number of train miles run, the number of passenger journeys, and the tonnage of goods and live stock carried by the Government railways of each State during each financial year from 1900-1 to 1906-7, inclusive. Corresponding returns for private lines are not available ;—

GOVERNMENT RAILWAYS.—AVERAGE MILEAGE WORKED, TRAIN MILES RUN, NUMBER OF PASSENGER JOURNEYS, AND TONNAGE OF GOODS AND LIVE STOCK CARRIED, 1901 TO 1907.

State.	1900-1.	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.
			AVERAGE MILEAGE WORKED.				
New South Wales	2,818	2,953	3,074	3,224	3,281	3,367	3,428
Victoria ...	3,228	3,265	3,335	3,371	3,384	3,394	3,395
Queensland ...	2,801	2,801	2,777	2,827	3,066	3,109	3,137
South Australia	1,736½	1,736½	1,736½	1,736½	1,744½	1,745½	1,814½
North. Territory	145½	145½	145½	145½	145½	145½	145½
West. Australia	1,355	1,356	1,434	1,535	1,568	1,607	1,676
Tasmania ...	*460	*463	*469	469	470	470	470
Commonwealth	12,544	12,725	12,971	13,308	13,659	13,838	14,066
			TRAIN MILES RUN.				
New South Wales	10,763,697	11,649,069	11,548,338	10,400,506	10,467,886	11,863,682	12,949,068
Victoria ...	11,066,016	11,284,944	10,286,272	9,172,644	9,023,365	9,392,069	10,035,914
Queensland ...	5,815,282	5,666,058	4,947,242	4,646,967	4,917,781	5,281,611	6,126,136
South Australia	4,393,181	4,196,138	3,770,351	3,739,068	3,773,106	3,875,167	4,334,243
North. Territory	30,277	30,275	30,422	31,545	30,708	30,461	30,901
West. Australia	4,126,202	4,507,919	4,611,315	4,594,234	4,285,235	4,359,633	4,180,796
Tasmania ...	*895,682	*902,918	*931,716	†947,588	945,852	945,918	961,379
Commonwealth	37,090,337	38,237,311	36,125,656	33,531,599	33,443,928	35,748,541	38,638,437

State.	1900-1.	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.
NUMBER OF PASSENGER JOURNEYS.							
New South Wales	29,261,324	30,885 214	32,384,138	33,792,689	35,158,150	37,500,531	41,413,084
Victoria ...	54,704,062	57,465,077	54,798,078	54,282,003	59,702,050	65,088,394	69,920,583
Queensland ...	‡8,647,194	‡8,421,258	‡7,353,177	‡7,527,831	7,655,613	8,214,617	9,301,542
South Australia	8,863,632	9,643,058	9,061,488	9,747,412	9,866,621	10,715,348	11,497,802
North. Territory	4,097	3,755	3,631	3,653	4,200	2,852	3,205
West. Australia	6,823,453	8,158,299	9,106,396	10,225,976	11,845,439	12,816,766	13,190,161
Tasmania ...	*777,445	*761,345	*814,483	†872,937	823,911	860,519	951,823
Commonwealth	109,081,207	115,338,006	113,521,386	116,452,501	125,055,984	135,199,022	146,268,200
TONNAGE OF GOODS AND LIVE STOCK CARRIED.							
New South Wales	6,398,227	6,467,552	6,596,241	6,656,759	6,724,215	7,629,492	8,798,832
Victoria ...	3,381,860	3,433,627	3,098,997	6,439,203	3,628,237	3,676,017	3,965,792
Queensland§ ...	1,530,440	1,725,520	1,566,960	1,572,226	1,712,243	1,791,675	2,261,299
South Australia	1,628,444	1,392,257	1,349,617	1,515,621	1,681,003	1,732,436	2,042,939
North. Territory	2,981	2,436	2,455	6,209	3,790	4,903	3,243
West. Australia	1,719,720	2,040,092	1,968,331	2,281,764	2,443,711	2,357,573	2,330,306
Tasmania§ ...	*314,628	*407,505	*418,701	†425,102	377,010	399,487	428,387
Commonwealth‖	14,976,300	15,468,989	14,996,302	15,896,884	16,570,209	17,591,583	19,825,795

* For the calendar years 1901, 1902, and 1903 respectively. The average mileage worked is larger than the actual mileage open, owing to the fact that the Government Railways have running powers over certain private lines. † The returns are for a period of six months ended the 30th June, 1904; the figures here given are estimated for a full period of twelve months. ‡ These figures are partly estimated, the actual returns excluding journeys by season ticket holders. § Exclusive of live stock. ‖ Exclusive of live stock returns for Queensland and Tasmania.

5. **Non-conformity of Gauge.**—With but few exceptions all the railway lines in the Commonwealth open for general traffic are now owned and managed by the respective States in whose territory they run, but, unfortunately for the purpose of interstate traffic, the construction of the various systems in different parts of Australia has proceeded without uniformity of gauge. In 1846 Mr. Gladstone, then Colonial Secretary, recommended in a despatch to the Governor of New South Wales that the 4 ft. 8½ in. gauge should be adopted. In 1850, however, the engineer to the Sydney Railroad and Tramway Company strongly advocated the adoption of the 5 ft. 3 in. gauge, and in 1852 an Act was passed making it compulsory that all railways in New South Wales should be constructed to the wider gauge, the Governors of Victoria and South Australia being duly advised of the step that had been taken. But in 1852 the company mentioned, having changed their engineer, also changed their views as to the gauge question, and in the following year they succeeded in obtaining the repeal of the Act of 1852 and in passing another, under the provisions of which the narrower gauge was made imperative. This step was taken without the concurrence of the other States concerned, and a considerable amount of ill-feeling arose, especially in Victoria, where two private companies had already placed large orders for rolling stock constructed to the broad gauge originally chosen. The result was that it was decided in Victoria to adhere to the 5 ft. 3 in. gauge as the standard gauge for that State, while the Sydney Railroad and Tramway Company proceeded with the construction of their lines to the 4 ft. 8½ in. gauge, and these two gauges have since been adhered to as the standard gauges of the respective States. The Queensland Government had at the outset adopted a gauge of 3 ft. 6 in. as being best suited to the requirements of the colony, and have since adhered to that gauge throughout the State, so that all goods have to be discharged and reloaded at the boundary between that State and New South Wales. In South Australia the broad gauge of Victoria was at first adopted, and the part of the interstate line between Adelaide and the Victorian boundary was constructed to that gauge, so that the line from Melbourne to Adelaide is uniform. In the lines which have been constructed more recently, however, and in the Northern Territory, the South Australian Government has, with a view to economy in construction, adopted a gauge of 3 ft. 6 in. In Western Australia and Tasmania the 3 ft. 6 in. gauge was also adopted. It was recognised in both these States

that the construction of railways was essential to their proper development, but as their financial resources would not bear a heavy initial expenditure in connection with the establishment of railway lines, it was decided to adopt the narrow gauge. In Victoria light railways have been constructed in recent years to a gauge of 2 ft. 6 in., whilst in Tasmania short lengths have been laid down to a 2 ft. gauge.

6. **Interstate Communication.**—Until the railway systems of the eastern States were connected at the common boundaries the inconvenience of non-conformity of gauge was not felt. Since then, however, the necessary transhipments of both passengers and goods have been a source of trouble, delay, and expense. On the 14th June, 1883, a railway bridge over the River Murray at Wodonga was opened for traffic, and communication was then established between Melbourne and Sydney; on the 19th January, 1887, the last section of the Victorian line to Serviceton, on the South Australian border, was completed, and a junction was thus effected with the South Australian line to Adelaide. On the 16th January, 1888, a junction was effected between the New South Wales and Queensland lines at Wallangarra, but there was still a break in the line from Sydney at the Hawkesbury River, thirty-six miles from Sydney. This last link was, however, completed on the 1st May, 1889, by the opening of the Hawkesbury River bridge, 2900 feet in length, and railway communication was thus established between the four capital cities, Brisbane, Sydney, Melbourne, and Adelaide.

7. **Classification of Lines according to Gauge.**—The subjoined table shews the total mileage of both Government and private railways (exclusive of sidings and cross-overs) constructed to different gauges, in each State and in the Commonwealth, on the 30th June, 1907:—

GOVERNMENT AND PRIVATE RAILWAYS,—CLASSIFICATION ACCORDING TO GAUGE OF ALL RAILWAYS OPEN TO GENERAL TRAFFIC ON THE 30TH JUNE, 1907.

State.	Mileage Constructed to Different Gauges.[1]					Total.
	5 ft. 3 in.	4 ft. 8½ in.	3 ft. 6 in.	2 ft. 6 in.	2 ft.	
	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
New South Wales ...	45½	3,453	35½	...	...	3,534
Victoria	3,314½	...	...	81½	...	3,396
Queensland ...	...	...	3,240	...	...	3,240
South Australia ...	594	...	1,272½	...	...	1,866½
Northern Territory...	...	...	145½	...	...	145½
Western Australia ...	...	...	2,458½	...	...	2,458½
Tasmania	...	...	594¾	...	23¼	618
Commonwealth ...	3,954	3,453	7,746¾	81½	23¼	15,258½

[1] The mileages of private lines are as up to the 31st December, 1906.

8. **Unification of Gauge.**—Probably the most serious error committed in the railway policies of the States of the Commonwealth has been the adoption of a different gauge in each colony; the lack of foresight in anticipating the development of the railway systems of the Commonwealth and the ultimate need for inter-communication, as well as the excessive ill-feeling which arose between the States, as mentioned above, has been the cause of the large extra cost, delay, and inconvenience incurred at the present time by the necessity for transferring both passengers and goods at all places where there are breaks of gauge. From time to time many propositions have been put forward with the object of securing a uniform gauge throughout the Commonwealth, and the great importance of the immediate unification of gauges before further expenditure is incurred by the States in railway construction is now recognised both by the Railway

Commissioners and by the public generally. The problem is, however, one which is by no means easy of solution, and the difficulties are increased by the introduction of what may be called questions of local or State policy. That its solution would greatly facilitate the development of commerce and the settlement on the land throughout the Commonwealth, is now widely recognised. The economic disadvantages of breaks of gauge, and of any artificial restrictions in regard to trade finding its proper geographical outlets, are also clearly seen by dispassionate observers. It is obvious, too, that in the event of a foreign invasion of any part of the seaboard, the interchange and concentrations of rolling stock for the transport of men and war material would be most seriously impeded, and would result in confusion and loss. Moreover, unification of gauges would tend to reduce to a negligible quantity all tendency to disorganisation and undue congestion likely to occur at times of bountiful seasons. Various trades and industries would be benefited by the concentration, at times of abnormal or periodic activity, of idle trucks from other States, in other words, the fullest use of all rolling stock, and the meeting of all exigencies would be greatly facilitated.

As regards the unification of gauges, the question naturally arises as to which gauge, if any, should be adopted as the universal gauge of the Commonwealth. The New South Wales gauge has a mileage of 3390; Victoria and South Australia have a combined mileage of 3819½ of 5 ft. 3 in. gauge; while Queensland, South Australia, the Northern Territory, and Western Australia have together 6964½ miles of 3 ft. 6 in. gauge. The mere question of preponderance of mileage, therefore, indicates the 3 ft. 6 in. gauge for adoption. But this question is obviously subordinate to those involving engineering and economic considerations. Thus the relative efficiency from the widest point of view, the relative costs of alterations of permanent way and rolling stock, of carrying capacity and speed, that is to say, questions of a technical nature about which figures are not available, enter into the grounds for decision. The advantage of reducing the broad gauge to the 4 ft. 8½ in. gauge is that there would be no necessity to touch tunnels, cuttings, bridges, or viaducts. The difficulties of handling the through traffic at the boundary between New South Wales and Victoria, owing to the break of gauge, though not involving a direct outlay of appreciable magnitude, involve indirectly considerable economic loss.

9. **Comparative Mileage of State-owned and Private Lines.**—The subjoined table shews for each State and for the Commonwealth (*a*) the length of lines owned by the respective State Governments, all of which lines are of course open for general use by the public, (*b*) the length of private lines available for general use by the public, and (*c*) the length not so available. The mileages specified in the case of State-owned lines are as up to the 30th June, 1907; those given for private lines are as up to the 31st December, 1906.

GOVERNMENT AND PRIVATE RAILWAYS.—COMPARATIVE MILEAGE OF STATE-OWNED LINES, OF PRIVATE LINES AVAILABLE FOR GENERAL TRAFFIC, AND OF PRIVATE LINES NOT SO AVAILABLE, 1907.

State.	State-owned Lines.	Private Lines available for General Traffic.	Private Lines not available for General Traffic.	Total of Lines open for General Traffic.	Total of all Lines.
	Miles.	Miles.	Miles.	Miles.	Miles.
New South Wales	3,453	81	...	3,534	3,534
Victoria... ...	3,396	...	...	3,396	3,396
Queensland ...	3,137	103	...	3,240	3,240
South Australia ...	1,832	...	34½	1,832	1,866½
Northern Territory	145½	...	...	145½	145½
Western Australia	1,764	277	417½	2,041	2,458½
Tasmania ...	462½	155½	...	618	618
Commonwealth	14,190	616½	452	14,806½	15,258½

10. **Comparative Railway Facilities in Different States.**—The area of territory and the population per mile of line open to the public for general traffic (including both Government and private lines) on the 30th June, 1907, are shewn in the subjoined statement for each State and also for the Commonwealth:—

GOVERNMENT AND PRIVATE RAILWAYS.—COMPARISON OF RAILWAY FACILITIES IN DIFFERENT STATES OF THE COMMONWEALTH, 1907.

State.	Population.	Area.	Per Mile of Line Open.	
			Population.	Area.
	Number.	Sq. miles.	Number.	Sq. miles.
New South Wales	1,550,930	310,372	439	87.8
Victoria	1,236,900	87,884	364	25.9
Queensland	542,348	670,500	167	206.9
South Australia	383,425	380,070	209	207.5
Northern Territory	3,570	523,620	25	3,598.7
Western Australia	264,260	975,920	129	478.2
Tasmania	176,809	26,215	286	42.4
Commonwealth ...	4,158,242	2,974,581	281	200.9

11. **History of Railway Construction.**—The first movement in the direction of the introduction of railways into Australia took place in 1846, when it was resolved, at a public meeting held in Sydney, that a survey should be made for a proposed line to connect the metropolis with Goulburn, a distance of 136 miles; the cost of construction was estimated at £6000 per mile, and a net profit of 8 per cent. per annum was anticipated. This survey was completed in 1848, and in the same year the Sydney Railroad and Tramway Company was formed, with a capital of £100,000, for the purpose of laying down a line between Liverpool, Parramatta, and Sydney, which it was proposed to extend later to Bathurst and Goulburn.

(i.) *New South Wales.* When the work of construction of the Sydney to Liverpool line was first commenced there was an abundant supply of labour, and rapid progress was at first made; the scheme was only well under weigh, however, when the discovery of gold caused a general exodus from the city, and the company found it impossible to secure sufficient labour to enable them to carry on their undertaking. In 1853 a movement for the construction of a line from Maitland to Newcastle took place and the Hunter River Railway Company was formed, and the work of construction was proceeded with at once. It was not long before this company shared the fate of its predecessor, and the properties and works of both companies were transferred to the Government under Act 18 Vic., No. 40, which placed the construction of the lines under the control of three Commissioners. It is interesting to note that the Government consented, in the year 1852, to allow 500 railway labourers to be brought out at the expense of the immigration fund. With the assumption of control by the Government the work of construction was vigorously pushed forward, and on the 26th September, 1855, the line from Sydney to Parramatta, 14 miles in length, was opened for traffic. For some years after this, however, railway construction languished, the enthusiasm of its advocates being, doubtless, considerably damped by the reflection that the short line from Sydney to Parramatta cost about £700,000—or £50,000 a mile. On the 27th May, 1869, the extension to Goulburn was completed. This line now forms part of the main interstate line between Sydney and Melbourne. In the meantime—in 1857—Newcastle had been connected with East Maitland by a line 17 miles in length; the line forms the first section of what is now known as the Northern Line, From Parramatta a line was extended in a westerly direction to Blacktown in 1860, and this line has now been further extended to form the main Western Line. For the purpose of convenience of reference and administration the Government railways in New South Wales are divided into three main lines with their branches, viz.:—the Northern Line, the Western Line, and the Southern Line. (*a*.) *The Northern Line* forms part of the main interstate route between New South Wales and Queensland. A junction was effected at Wallangarra, on the border between the two States, on the 16th January, 1888, and on the 1st May, 1889, the bridge over the Hawkesbury River was opened for traffic. After passing through Newcastle, 104 miles from Sydney, the line throws off a long branch from Werris Creek, extending in a north-westerly direction to Narrabri, Cryon, Collarendabri, and Inverell, which is 500 miles distant from Sydney. There is another line in the extreme north-east district of the State, known as the Grafton-Tweed line, at present isolated from the other railway lines. It has been suggested that this line should be joined to the main Northern Line, and also to the south-coast line from Brisbane, and thus to form an alternative route between the two States. The total length of the line is 147 miles, and the last section to Grafton was completed in 1905; from Murwillumbah, the northern terminus, a steamer now runs to Tweed Heads which is connected with Brisbane by the Queensland south-coast line. (*b*) *The Western Line*, running inland in a westerly direction, was completed as far as Bourke, its present terminus, 508 miles from Sydney, in 1885. It has three important branches, the first running from Orange to Condobolin, on the River Lachlan; the second from Dubbo to Coonamble; and the third from Nyngan to Cobar, from which place it is proposed to eventually extend the line to Broken Hill, *via* Wilcannia. (*c*) *The Southern Line* forms part of the main route between Sydney and Melbourne, a junction having been effected between the New South Wales and Victorian lines in 1883, as stated above. Numerous branches have been constructed from the main southern line; Goulburn is the junction for two branches; one to Cooma, passing through the pastoral district of Monaro for a distance of 130 miles, was opened in 1889; the other to Crookwell, 36 miles in length, was completed in 1902. From Cootamundra there are also two branch lines, the last extensions of which were opened for traffic in 1903; one runs to Wyalong, a distance of 80 miles, and the other to Tumut, 65 miles in length. From Junee a branch runs parallel to the Murrumbidgee River and was opened as far as Hay in 1884, and to Finley in 1898, thus bringing the Riverina district into direct communication with Sydney. From Culcairn one branch to Corowa was opened in 1892 and another to Germanton in 1902. The southern system also includes the Illawarra line, which runs from Sydney along the south coast as far as Nowra, a distance of 92 miles.

(i.) *Victoria.* While the Sydney Railroad and Tramway Company was struggling with financial difficulties, and endeavouring to secure a sufficient supply of labour to enable them to carry on their undertaking, the work of railway construction was commenced in the neighbouring State of Victoria, no less than three private companies being promoted for that purpose in the year 1853. The Government provided substantial aid to these companies in the shape of land grants and guarantee of interest, and on the 13th September, 1854, the first complete railway in Australia, from Flinders Street, Melbourne, to Port Melbourne, was opened for traffic. This line was constructed by the Melbourne and Hobson's Bay Railway Company; it had been commenced nearly three years later than the line to connect Parramatta with Sydney, but was only two-and-a-half miles long. On the 13th May, 1857, the same company opened for traffic the line from Flinders Street to St. Kilda, and during the period from 1859 to 1861 also constructed lines to Richmond, Windsor, Hawthorn and Brighton. On the 17th June, 1857, a line from Williamstown to Geelong, thirty-nine miles in length, which had been built by another company was declared open. In the meantime, the Government, in addition to assisting private enterprise, had in 1855 taken over two unfinished lines commenced by the third of the companies referred to, and completed the work of construction on its own account. These lines, running from Williamstown to Footscray, and from Melbourne to Sunbury, were opened for traffic in 1859. By the end of the year 1863, the Government had acquired all the railway lines in the State, with the exception of those owned by the Melbourne and Hobson's Bay Railway Company, which amounted to a total length of sixteen and one-third miles, and which were eventually purchased by the Government in 1878. At the present time all the railways in Victoria are owned by the State, and are divided into seven systems—the South-Eastern, the Eastern, the North-eastern, the Northern (including the Midland district lines), the North-western, the Western and South-western, and the suburban lines. (*a*) *The South-eastern system* branches off from the suburban system at Dandenong, and was completed as far as Port Albert, its present terminus, in 1892; a branch line to Outtrim was opened in 1896. (*b*) *The Eastern system* also leaves the suburban system at Dandenong. The line was opened for traffic as far as Bunyip in 1877, and was extended *via* Moe and Sale, as far as Bairnsdale on the Gippsland lakes, 171 miles from Melbourne, in 1888; branches run to Neerim South, Thorpdale, North Mirboo, and Briagolong. The Eastern system also comprises two extensions to the suburban system, the first running from Croydon to Healesville, thirty-nine miles in length, with a branch from Lilydale to Warburton, the second being a narrow gauge (2 ft. 6 in.) line completed as far as Gembrook in 1900. (*c*) *The North-eastern system* comprises the Victorian part of the main interstate line between Melbourne and Sydney, which was opened for traffic as far as Wodonga in 1873, though it was not until ten years later that the bridge over the River Murray was completed, and railway communication between New South Wales and Victoria established. Numerous branches from the main line have been constructed; a branch to Bright was opened in 1890; to Tallangatta and to Mansfield in 1891; a narrow-gauge (2 ft. 6 in.) branch to Whitfield in 1899; while a branch to Toolamba was extended to Tocumwal, on the River Murray, in 1905. (*d*) *The Northern system* joins the suburban system at Digger's Rest, twenty-one miles from Melbourne. The main line was opened for traffic as far as Bendigo in 1862, and was extended to Echuca in 1864. A large number of branch lines belong to this system. From Carlsruhe a branch runs to Ballarat, *via* Daylesford and Creswick, while another line branches off from Creswick to Maryborough. Between Carlsruhe and Daylesford the line attains a height of 2469 feet above sea-level, being the greatest altitude of any line in Victoria. From Maryborough the line was extended to the north as far as Birchip in 1893, and to Mildura in 1903; other branches to Swan Hill, Sea Lake and Ultima were opened in 1890, 1895, and 1900 respectively. Mildura is the most northerly point reached by rail in Victoria, and is situated close to the confluence of the Darling and Murray Rivers. (*e*) *The North-western line* connects with the suburban system at Rockbank, eighteen and a half miles from Melbourne; it was opened as far as Ballarat in 1862, and was extended in sections *viâ* Ararat, Stawell, Murtoa, Horsham, and Dimboola as far as Serviceton, on the South Australian border, on the 19th January, 1887, a junction with the main line to Adelaide being thus effected. Branch lines were opened to Hopetoun and to Goroke in 1894; to Rainbow in 1899; and from Stawell to Grampians in 1905. (*f*) *The Western and South-western system* was opened up to Geelong in 1857, as stated above. The line was extended to Winchelsea in 1876, to Colac in 1877, to Warrnambool and to Port Fairy in 1890, and was connected with the main line to Serviceton, *via* Hamilton and Ararat, in 1890. An extension to Portland was completed in 1877, and branch lines were opened to Casterton and Coleraine in 1884 and 1888 respectively. (*g*) *The Suburban system* includes a number of short lines referred to above connecting up the suburbs of Melbourne, and also comprises longer sections of lines radiating from the metropolis in various directions, and thus joining the various main systems with the terminal stations in Melbourne.

(iii.) *Queensland.* Legislative sanction for the construction by the Government of the first railway line in Queensland, from Ipswich to Grandchester, was granted in the year 1863, and on the 25th February in the following year the formality of cutting the first sod was carried out with due ceremony at Ipswich. The line was opened on the 31st July, 1865, and was extended to Toowoomba, seventy-seven miles from Ipswich, in 1867. In the same year a line, thirty miles in length, was opened between Rockhampton and Westwood, extended to Emerald in 1879 and to Longreach in 1892. Branches were opened from Emerald to Clermont and from Emerald to Springsure in 1884 and 1887 respectively. In the meantime the line had been extended from Toowoomba—(*a*) to the south as far as Wallangarra, on the New South Wales border, in 1887; and (*b*) to the west, *via* Dalby, Roma, and Mitchell, as far as Charleville, in 1888. An extension from

Charleville to Cunnamulla, 503 miles from Toowoomba, was opened in 1898. Communication between Brisbane and Rockhampton was opened up in 1903, and in the same year the south-coast line from Brisbane was extended to Tweed Heads. The first section of the Townsville line as far as Reid River, a distance of thirty-five miles, was opened in 1880, and was extended to Charters Towers in 1882, to Hughenden in 1887, and to Richmond in 1904, while a further extension to Gilliat is now under construction. The first section of the Mackay line was opened in 1885, and extended to Eton in 1886. The Normanton line, as far as Haydon, a distance of thirty-eight miles, was brought into use in 1889, and extended to Croydon in 1891. In 1885 a line from Cooktown to Palmer's Road, thirty miles in length, was opened for traffic, and an extension to Laura was completed in 1888. The line running from Cairns was commenced in 1887, and was completed as far as Atherton in 1903, while the Bowen line was opened to Guthalungra in 1890, and extended to Wangaratta in 1891.

(iv.) *South Australia.* The first railway line constructed in the State of South Australia was the Adelaide City and Port Railway, opened on the 21st April, 1856, the length being seven and a half miles and the gauge 5 ft. 3 in. This line was extended to the Semaphore, a further distance of one and a half miles, in 1878, and is now called the Port line. In 1857 a line from Adelaide, nineteen miles long, reaching as far as Smithfield, was opened for traffic, and was extended to Terowie, via Gawler, Roseworthy, and Hamley Bridge, in 1880. Terowie is the terminus of the broad gauge line, but from the main line a narrow gauge (3 ft. 6in.) line was run to Petersburg in 1881, connection being thus formed with the narrow gauge lines, which had been previously constructed, running from Port Wakefield, Moonta, Port Pirie, and Port Augusta, from which place it is now proposed to construct a trans-continental line by connecting it with Kalgoorlie, on the Western Australian goldfields. From Petersburg a branch to Cockburn on the New South Wales border was opened in 1887, and an extension through New South Wales territory to Broken Hill, a distance of thirty-six miles, was opened by the Silverton Tramway Company in 1888. Another branch from Quorn was opened to Oodnadatta, 688 miles from Adelaide, in 1891. (*a*) *The Interstate line.* The first section of the South Australian part of the interstate line was opened from Adelaide to Aldgate, a distance of twenty-one and three-quarter miles, in 1883, and extended until the Victorian boundary was reached on the 1st January, 1885. In the districts lying to the south of Adelaide, a horse-tramway line, constructed in 1854 between Goolwa and Port Elliot, was extended to Victor Harbour in 1864, and to Strathalbyn in 1869; railway communication was opened up between these districts and Adelaide in 1884. (*b*) *The Northern Territory Railway.* In the Northern Territory a survey was made in 1878 for a line between Palmerston and Pine Creek, a distance of 145½ miles, and this line was opened for traffic in 1889; it is proposed to carry it across the continent in a southerly direction to meet the trunk line from Adelaide to the north, which at present has its terminus at Oodnadatta.

(v.) *Western Australia.* Railway operations commenced in Western Australia with the construction of the line from Geraldton to the copper mining district of Northampton, a length of thirty-four miles, opened for traffic on the 26th July, 1879. In the following year no further lines were opened, but on the 1st March, 1881, the Fremantle-Guildford line, nineteen and a half miles long, was brought into use, to which line extensions were made to Chidlow's Well, opened on the 11th March, 1884, and to York and Beverley in 1885 and 1886 respectively, while branch lines to Northam and to Newcastle followed in October, 1886, and January, 1888. (*a*) *The South-Western Railway.* On the 12th March, 1891, a third separate system was added by the opening of a line running sixteen miles inland from Bunbury, and this line was connected with the other systems in the State in 1893, by the opening of a line 110 miles in length from East Perth Junction to Picton Junction, near Bunbury. Further extensions and branches were opened in the next two years, and on the 30th June, 1895, 573 miles had been opened for traffic. (*b*) *The Eastern Goldfields Line.* The Goldfields railway system was commenced by the construction of the line from Northam to Southern Cross, a distance of 170 miles.

opened in 1894. In the meantime the Geraldton line had been connected with Perth by the Midland Railway, constructed by a private company under a land grant concession, and on the 21st November, 1894, a line from Mullewa Junction, near Geraldton, was opened, passing through pastoral country for a distance of about fifty-seven miles in the direction of the Murchison fields. On the 1st January, 1897, communication was established with Kalgoorlie, and the line was extended to Menzies on the 13th February, 1899, and to Laverton, 595½ miles from Perth, on the 1st February, 1905. (*c*) *The Northern line.* In the Murchison district an extension as far as Nannine was opened for traffic on the 1st June, 1903. On the 1st July, 1889, the West Australian Land Company opened for traffic a line which had been constructed, 243 miles in length, from Albany to Beverley, the southern terminus of the eastern system, under a land grant concession of 12,000 acres per mile of line constructed. The lands and railway belonging to this company were acquired by the Government by purchase on the 1st December, 1896, at a price of £1,100,000. This line is now known as the Great Southern line. (*d*) *The Water Supply Question.* Reference may here be made to the fact that the main natural difficulty with which railway engineers have had to contend in Western Australia has been found to be the scarcity of water in practically the whole of the country traversed by their system. Excepting only the South-western lines, the water supply for the locomotives is generally obtained from dams or reservoirs which are dependent upon the rainfall. The Railway Department on the Eastern and Eastern Goldfield Railway expended over £180,000 in dams prior to the Coolgardie water scheme water being available, and a large condensing plant, capable of condensing 100,000 gallons of water daily, was erected at Coolgardie in 1899. A sextuple multiple effect condensing plant for sea water was laid down at Geraldton in 1904, and a water-softening plant, capable of softening 2000 gallons of water per hour, was erected at Laverton in 1906.

(vi.) *Tasmania.* In Tasmania an agitation had long existed for the construction of a line of railway from Hobart to Launceston, and, although Parliament granted a vote of £5000 for the survey of this line as far back as the year 1863, it was not formally opened for traffic until November, 1876, from which time the line was continuously worked by the Tasmanian Light Railway Company up to October, 1890, when it was purchased by the Government for the sum of £1,106,500. In the meantime the construction of a line between Launceston and Deloraine, forty-five miles in length, had been commenced, and was opened on the 10th February, 1871. This line was originally projected by a private company—the Launceston and Western Railway Company—but a large part of the capital was raised by the Government, and, the company becoming involved in financial difficulties, the line was taken over by the State in 1872. In 1884 a length of forty-eight miles of line was opened for traffic by the Emu Bay Railway Company, extending from Emu Bay to Mount Bischoff and to Waratah. Branches from the main line between Hobart and Launceston were opened from Parattah to Oatlands, a distance of four and a half miles, in 1885, and from Bridgewater to Glenora, twenty-four and a half miles in length, in 1888. The line from Launceston to Scottsdale, a distance of forty-seven miles, was brought into use on the 9th August, 1889. The lines from Deloraine to Devonport and from Conara to Formby were opened in 1885 and 1886 respectively. Several years elapsed before any further extensions were taken in hand. In 1892 the Government submitted several railway proposals to Parliament, and, having obtained the necessary authority, railway construction was once more resumed. The railway systems of Tasmania are now fairly well developed, and, though their construction has been slow, it must be remembered that they have had to face severe competition with sea-borne traffic, and that, owing to the limited area and population of the State, there are no large inland centres to support the traffic on the railways.

12. **Length and Gauge of Railway System in each State.**—A map shewing the State railway lines. and also the private lines open to the public for general traffic, in the different States of the Commonwealth is given herein on page 583. In all the States the Government railways are grouped, for the purpose of convenience of adminis-

tration and management, into several divisions or systems, some of which have already been briefly referred to above in dealing with the history of construction of the railways. The subjoined summary shews concisely the gauge and length of the main and branch lines included in each division or system of the different States of the Commonwealth for the year ended the 30th June, 1906:—

GOVERNMENT RAILWAYS.

Particulars.	Length.	Gauge.	
	Miles.	ft.	in.
1. NEW SOUTH WALES.			
(i.) The Northern line and branches—			
(a) Main line. Strathfield-Wallangarra	486	4	8½
(b) Branch lines	390	4	8½
(ii.) The Grafton-Tweed line	147	4	8½
(iii.) The Western line and branches—			
(a) Main line. Granville-Bourke	497	4	8½
(b) Branch lines	655	4	8½
(iv.) The Southern line—			
(a) Main line. Granville-Wodonga	382	4	8½
(b) Branch lines	679	4	8½
(v.) The South-coast (Illawarra) line—			
(a) Main line. Sydney to Nowra...	92	4	8½
(b) Branch lines	8	4	8½
(vi.) Suburban lines	17	4	8½
(vii.) Broken Hill line. Broken Hill-Tarrawingee	40	4	8½
Total	3,391	...	
2. VICTORIA.			
(i.) The South-eastern system—			
(a) Main lines. Dandenong-Port Albert, Aspendale-Stoney Point	145	5	3
(b) Branch lines	14	5	3
(ii.) The Eastern System—			
(a) Main lines. Dandenong-Bairnsdale, Bayswater-Gembrook, Croydon-Healesville	18 202	2 5	6 3
(b) Branch lines	97 3	5 2	3 6
(iii.) The North-eastern system—			
(a) Main line. Craigieburn-Wodonga	171	5	3
(b) Branch lines	30½ 440½	2 5	6 3
(iv.) The Northern system—			
(a) Main line. Digger's Rest-Echuca	135	5	3
(b) Branch lines	925	5	3
(v.) The North-western system—			
(a) Main line. Rockbank-Serviceton	266	5	3
(b) Branch lines	194	5	3
(vi.) The Western and South-western system—			
(a) Main line. Werribee-Portland	272	5	3
(b) Branch lines	30 263	2 5	6 3
(vii.) The Suburban system—			
Including the lines to Aspendale, Dandenong, Bayswater, Croydon, Eltham, Craigieburn, Digger's Rest, Rockbank, and Werribee	188	5	3
Total	3,394	...	

Particulars.	Length.	Gauge.	
3. QUEENSLAND.	Miles.	ft.	in.
(i.) The Southern division—			
(*a*) The Southern line. Brisbane-Wallangarra	233	3	6
(*b*) The Western line. Gowrie Junction-Cunnamulla	495	3	6
(*c*) The Nth.-coast line. Northgate Junction-235 mls. 14 chs.	235	3	6
(*d*) The South-coast line. Yeerongpilly-Tweed Heads	65	3	6
(*e*) Suburban lines	76	3	6
(*f*) Branch lines	493	3	6
(ii.) The Central division—			
(*a*) The Coast line. 235 miles 14 chains-Rockhampton	161	3	6
(*b*) The Central line. Archer Park-Longreach	429	3	6
(*c*) Branch lines	162	3	6
(iii.) The Northern division—			
(*a*) Mackay line	42	3	6
(*b*) Bowen line	48	3	6
(*c*) The Great Nthn. Rlwy. Townsville-Winton branches	465	3	6
(*d*) Cairns line	69	3	6
(*e*) Cooktown line	68	3	6
(*f*) Normanton line	96	3	6
Total	3,137	...	
4. SOUTH AUSTRALIA.			
(i.) The Midland system—			
(*a*) Main line. Adelaide-Terowie	140	5	3
(*b*) Branch lines	97	5	3
(ii.) The Northern system—			
(*a*) Terowie-Oodnadatta	548	3	6
(*b*) Other lines	455 5	3 5	6 3
(iii.) The Southern system—			
(*a*) Main line. Adelaide to Serviceton	196	5	3
(*b*) Branch lines	69½	5	3
(iv.) The South-eastern system—			
(*a*) Kingston-Wolseley	101	3	6
(*b*) Branch lines	124	3	6
(v.) Port Broughton line	10	3	6
Total	1,745½	...	
5. NORTHERN TERRITORY.			
Palmerston-Pine Creek	145½	3	6
6. WESTERN AUSTRALIA.			
(i.) Western railway—			
(*a*) Main line. Fremantle-Northam	78	3	6
(*b*) Branch lines	108	3	6
(ii.) Eastern Goldfields railway—			
(*a*) Main line. Northam-Laverton	520	3	6
(*b*) Branch lines	69½	3	6
(iii.) South-western railway—			
(*a*) Main line. Perth-Bunbury	115	3	6
(*b*) Branch lines	125	3	6
(iv.) Great Southern railway—			
Beverley-Albany Jetty	243	3	6
(v.) Northern railway—			
(*a*) Main line. Geraldton-Nannine	310	3	6
(*b*) Branch lines	43	3	6
Total	1,611½	...	

Particulars.	Length.	Gauge.
7. TASMANIA.		
(i.) Main line. Hobart-Evandale Junction	122¾	3 6
(ii.) Derwent Valley line. Bridgewater-Glenora	24¼	3 6
(iii.) Apsley line. Brighton Junction-Apsley	26	3 6
(iv.) Parattah-Oatlands line	4½	3 6
(v.) Fingal line. St. Marys-Conara	46¾	3 6
(vi.) Western line. Launceston-Burnie	111½	3 6
(vii.) Chudleigh line...	12½	3 6
(viii.) Scottsdale line. Launceston-Scottsdale	47	3 6
(ix.) Sorell-Bellerive line	14½	3 6
(x.) Zeehan line. Regatta Point-Zeehan...	29½	3 6
(xi.) North-east Dundas tramway. Zeehan-Williamsford ...	19	2 0
(xii.) Comstock tramway	4¼	2 0
Total	462½	...
Grand total of Government railways in the Commonwealth ...	13,886	...

13. **Administration and Control of Government Railways.**—In each State of the Commonwealth the policy has now been established that the railways should be kept under the control of the Government. This policy, as has been shewn, was early actualised in Australia, and, excepting in cases presenting unusual circumstances, may be regarded as the settled policy of the country. It may here be observed that for many years past nationalisation of railways throughout Europe has been a feature of the development of railway policy, and so far there is no sign of any movement in an opposite direction. Indeed it may be said that the Governments have recognised the supreme importance of a railroad policy, not only as an element in the industrial, but even in the political life of nations, and have felt that nothing short of complete ownership and direct management of the railroads would give them the power which, for national reasons, they must exert. And in America the modern tendency is to so condition the freights by Governmental action as to give at least a quasi-national character to the railways.

(i.) *New South Wales.* Prior to the year 1888 the control of the State railways in New South Wales was vested in the Minister for Works, under the provisions of the Railways Act of 1858, the actual management being in the hands of a Commissioner. In 1888, however, the Act referred to was repealed by a new Act, the object of which was to improve the administration and to free it from political influences. Under this Act, as amended in 1901, three Commissioners were appointed for a period of seven years, but in 1906 an amending Act was passed, which provides for the appointment of a Chief Commissioner with supreme power, an assistant Commissioner for railways, and an assistant Commissioner for tramways. The Commissioners are required to present an annual report to Parliament, through the Minister for Railways, setting forth an account of their proceedings, and of the revenue and expenditure during the previous year.

(ii.) *Victoria.* In consequence of the agitation which arose after the serious accidents which occurred at Windsor, Jolimont, and Hawthorn, a new Railway Act was passed and came into force on the 1st February, 1883. Under its provisions the management and control of the State railways were placed in the hands of three Commissioners, who supervised the construction of new lines as well as the general management of lines already open for traffic. On the 1st January, 1892, the duty of the construction of new lines was transferred to the Board of Land and Works, and the Minister, under the provisions of the Railways Act of 1891, was given greater powers to interfere in the direct management. In 1895 the Government appointed a Board to inquire into and report upon the general working of the Railway Department, and as a result of their report the Railways Act of

1896 was passed. The management was again placed in the hands of one commissioner until the year 1903, when the Victorian Railway Commissioners Act was passed; under this Act both the management and construction of railways were placed in the hands of three Commissioners, and the actual working was to a great extent freed from political control.

(iii.) *Queensland.* The first Act referring to the construction of railways, passed by the Queensland Legislature in 1863, provided for the appointment of a Commissioner of Railways, who was to be the permanent head of the Railway Department, but was, however, also to be subordinate, as regards all matters of administration, to the Minister in charge of the railways for the time being. This arrangement was continued until the year 1888, when an Act was passed providing for the appointment of three Commissioners, invested with full powers as to the administration, management, and construction of the railways, the control of which was thus removed from political influence. The functions of a Minister for Railways were not abolished, but they were so defined and limited that the Minister became in effect an intermediary between the Commissioners and Parliament, to which body the Commissioners were bound to make an annual report, setting forth an account of their proceedings and a financial statement for the previous year. The separation from each other by long distances of some of the railway lines in Queensland put difficulties in the way of their economical administration and supervision, since it is found necessary to maintain, in connection with each of the principal detached lines, a separate staff of engineering and managing officials.

(iv.) *South Australia.* The Public Railways Act, passed in South Australia in March, 1847, was the first Act passed in Australia referring to the construction of railways; its provisions, however, contained many obsolete clauses of English railway legislation, and were soon modified. In 1887 an Act to make better provision for the construction, maintenance, and management of railways was passed, and came into force on the 1st June, 1888; it removed the control of the railways from political influence and provided for the appointment of three Commissioners, into whose hands the management and the supervision of the railways passed. The Act of 1888 was, however, amended by the Railway Commissioners Act of 1895, which provides for one Commissioner only, assisted by a Board of Advice.

(v.) *Western Australia.* From the time of the inception of railways in this State until the granting of responsible government in 1890, the construction, maintenance, and control of all railways were in the hands of an official holding the title of Commissioner of Railways, and having a seat in the Executive Council. This official was invested with very extensive powers for all purposes connected with railways, and had also to supervise the safe working and the charges made by private railway owners. On the institution of responsible government the office of Commissioner was converted into a Ministerial one; the active management was placed in the hands of an officer styled General Manager of Railways, while construction works on new lines were carried out by the Department of Public Works. In 1902 a Bill was introduced into Parliament providing for the appointment for a term of five years of a Railway Commissioner to be free from political influence. This Bill received the Vice-regal assent on the 20th December, 1902. The former Railway Acts, of which the Act in question was an amendment, continued to remain in force, with the result that certain anomalies and ambiguities arose, in consequence of which a Consolidating Government Railways Act was passed in 1904. Under its provisions the administration of all Government railways was placed in the hands of the Commissioner, who was relieved from the supervision of private railways. The construction of new railways or of extensions is left, as formerly, in the hands of the Minister controlling the Department of Public Works.

(vi.) *Tasmania.* The control, construction, and maintenance of Government railways is vested in the Department of Lands and Works, the active management being in the hands of an officer styled the General Manager, who is responsible to Parliament.

14. **Lines under Construction and Proposed New Lines.**—The following statement shews the length of Government railway lines in course of construction on the 30th June, 1907:—

GOVERNMENT RAILWAYS.—MILEAGE OF LINES IN COURSE OF CONSTRUCTION ON THE 30TH JUNE, 1907.

State, etc. ...	N.S.Wales.	Queensland.	S. Aust.	W. Aust.	Commonwealth.
Miles	145½	309	87¼	190½	732¼

(i.) *Extension of Existing Lines.* In spite of the great extension of State railways which has taken place since the year 1875 throughout the Commonwealth, there are still vast tracts of country into which lines have not yet penetrated. (*a*) In *New South Wales* the lines under construction are of the "pioneer" class, and are made with a view to affording railway communication over level country to districts in which the traffic would not warrant the expenditure necessary to provide thoroughly equipped lines. As the traffic increases the permanent way is strengthened in order to allow the heavy types of engines to run over it. It is probable that railway extension in New South Wales, in the near future, will be mainly confined to lines of the "pioneer" class. The Grafton-Tweed line, in the extreme north-east of the State, is being extended year by year. and will in all probability soon form part of an alternative main route between Newcastle and Brisbane. (*b*) In *Victoria* and *Tasmania*, where the railway systems are now well developed, there are no new lines or extensions of importance in view, but the question as to the electrification of the suburban system of Melbourne, with a view to obtaining a more rapid and frequent train service, is receiving attention. Since the year 1899 four narrow gauge (2ft. 6in.) lines, with a total mileage of 81½ miles, have been opened for traffic in Victoria; these lines have been built for the purpose of providing a light and cheap means of communication to districts but sparsely populated, and have, in some cases, been constructed on the principle which has been adopted by the Minister of Railways of "loading" the lands increased in value by the building of the lines. The Standing Committee on Railways for Victoria recommended, in February, 1907, the construction of six short spur lines and extensions, having a total length of 78 miles, at a total cost of £240,512, the total maximum amount of loading for the six lines to be £4588. A junction between Victorian and New South Wales lines at Tocumwal has lately been agreed upon. (*c*) In *Queensland*, *South Australia*, and *Western Australia* there are still tracts of country of immense area, which are as yet practically undeveloped, and in which little in the nature of permanent settlement has been accomplished; the general policy in these States is to extend the existing lines inland, in the form of light railways, as settlement increases, and although it is true that lines which were not likely to be commercially successful in the immediate future have been constructed from time to time, for the purpose of encouraging settlement, the general principle that the railways should be self-supporting is kept in view.

(ii.) *Proposed Transcontinental Lines.* (*a*) A proposal which has recently received considerable attention is to connect the railways of the eastern and southern districts of Australia with the Western Australian lines by the construction of a line between Port Augusta, in South Australia, and Kalgoorlie, on the Western Australian goldfields, a distance of 1100 miles. The Transcontinental Railway Bill, passed in 1907 by the Federal Houses of Parliament, provides for the expenditure of a sum of £20,000 for the survey of the proposed line, the estimated cost of construction of which amounts to £4,559,000. The greater part of the country which it is proposed to traverse is practically unoccupied owing to the scarcity of permanent surface water, but there are otherwise no engineering difficulties in connection with the construction of this line. which it is claimed would be of immense benefit in the expedition of the European mails to the southern and eastern parts of the continent, and, if occasion should arise. in facilitating the transport of troops. (*b*) Another proposal is to extend the main northern line from Adelaide, which at present terminates at Oodnadatta, as far as Pine Creek, the southern terminus of the Northern Territory line from

Palmerston. The distance between Oodnadatta and Pine Creek by the route followed by the telegraph wire is 1140 miles, and it is claimed that, if a railway line were constructed between these two places, it would be practicable for passengers and mails to reach London from Adelaide in seventeen days, *via* Port Darwin and the trans-Siberian railway. In the course of the year 1896 offers were made on behalf of various syndicates to construct this line, but the Government was not at that time prepared to recommend the acceptance of any offer based upon the land grant or guarantee system. In 1902, however, the Government invited tenders for the construction of 1063 miles of 3 ft. 6 in. line on the land grant system, to be built at the rate of at least 100 miles in any one year, the grant of land offered amounting to nearly 80,000,000 acres. No tenders were accepted and subsequent offers have been refused. The country through which this line would pass presents no great engineering difficulties; for the most part it is one vast plain, with an occasional sand ridge or a watercourse.

15. **Particulars of Private Railways.**—As has been stated above (see paragraph 3), a number of private railway lines have been constructed from time to time in the Commonwealth. By far the greater proportion of such lines, however, have been laid down for the purpose of hauling timber, coal, or other minerals, and are not generally used for the conveyance of passengers or for public traffic; in many cases they are often practically unballasted and are easily removable, running through bush and forest country in connection with the timber industries, and for conveying firewood for mining purposes. The following table gives particulars, as far as they are available, for all private lines in the Commonwealth during the year 1905, exclusive of short branch lines connecting collieries, factories, and other places, with the main systems:—

PRIVATE RAILWAYS.—PARTICULARS OF WORKING DURING THE YEAR 1905.

State.	Miles Open.	Train Miles Run.	Cost of Construction & Equipment.	No. of Passengers Carried.	Tons of Goods Carried.	Gross Receipts.	Working Expenses.
	Miles.	No.	£	No.	Tons.	£	£
New South Wales	81	156,457	553,389	58,877	712,268	132,562	48,794
Queensland ...	103	*	329,450†	*	*	63,572	23,453
South Australia‡	34½	27,400	80,000	*	*	*	*
Western Australia	694½	602,687§	2,430,369	55,591§	772,218§	71,254	72,829§
Tasmania ...	155½	158,122	1,119,849	62,681	129,270	79,287	39,459
Commonwealth	1,067½	944,666	4,578,090	177,146	1,613,756	346,675	184,535

* Information not supplied. † To the 31st December, 1906. ‡ To the 30th June, 1906. § Incomplete.

It will be seen that there are no private lines in the State of Victoria, nor in the Northern Territory, and that the greatest mileage is in Western Australia. In the latter State, however, none of the private lines are trunk lines, with the exception of that owned by the Midland Railway Company, but are primarily intended for the purpose of opening up forest lands or mining districts.

(i.) *Private Lines in New South Wales.* In this State there are at present three private lines. (*a*) *The Deniliquin-Moama line.* In 1874 permission was granted by the New South Wales Government to a private company to construct a line forty-five miles long from Deniliquin, in the Riverina district, to Moama, on the Victorian boundary opposite Echuca, which is connected by rail with Melbourne. The line was opened in 1876, the land required being granted by the Government. The cost of construction and equipment up to the end of the year 1905 was £162,672. The company owns four locomotives, six passenger carriages, and sixty-three goods trucks and vans. (*b*) *The Cockburn-Broken Hill line.* This line is owned by the Silverton Tramway Company. It was opened in 1888, and connects Broken Hill with the South Australian railway system.

The capital expenditure was £385,017, including the cost of fifteen locomotives, sixteen passenger carriages, and 520 goods vehicles. (c) *The Warwick Farm line* is a short line, three-quarters of a mile in length, connecting Liverpool with the Warwick Farm Racecourse. Government rolling-stock is used. In addition to the three lines just referred to, legislative sanction was obtained in 1890 for the construction of a private line from the flux quarries at Tarrawingee to the Broken Hill line, a distance of forty miles. The line was purchased by the Government in 1901, and was leased to the Silverton Tramway Company to work for a period of five years at an annual rent of 3 per cent. on the capital outlay.

(ii.) *Private Lines in Queensland.* In 1897 the Queensland Government passed an Act to permit the construction by a private company of a line 103 miles in length from Mareeba to Chillagoe. The line is worked by the company, but, with the exception of the locomotives, Government rolling-stock is used. In addition to this line there are in Queensland a number of tramways which are owned and managed by local bodies, and which are more particularly referred to below in the section dealing with tramways.

(iii.) *Private Lines in Western Australia.* Owing to the Government's past difficulty in constructing lines, urgently required for the development of the country, private enterprise was encouraged to undertake the work of construction on the land-grant principle, and two trunk lines were thus constructed. *(a) The Midland Railway.* This line is 277 miles in length, and runs from the Midland Junction, ten miles from Perth, to Walkaway, where it joins the Government line running to Geraldton. It was constructed under a concession of 12,000 acres of land per mile of line constructed, to be selected along the entire route of the railway. The total capital expenditure up to the year 1901 was £1,999,006, the revenue for the year 1905 being £69,332, and the expenditure £40,634. *(b) The Great Southern Railway.* This line, which was built by private enterprise under the land-grant system, is 243 miles in length, and was acquired by the Government by purchase on the 1st January, 1897. The total price paid, with all the interests of the private company and of the original concessionaire, was £1,100,000, which was divided by the Government for book-keeping purposes into £300,000 for the land and £800,000 for the railway. *(c) Millar's Karri and Jarrah Company's lines.* These lines have mostly been built under special timber concessions and leases. There are in all nine lines situated in various parts of the State extending out into the bush, whence logs are brought to the mills. At the end of the year 1905 the total mileage of these lines was 284 miles, and the total capital expended was £328,685. The company has in all twenty-two locomotives, eight passenger carriages, and 726 goods and timber trucks.

(iv.) *Private lines in Tasmania.* The private lines in this State are owned by two companies, and are situated in the western districts of the island. *(a) The Emu Bay Railway Company.* The lines owned by this company run from Burnie to Zeehan, and from Guildford Junction to Waratah, and have a total mileage of 103½ miles. The line from Zeehan to Dundas. five and a half miles in length, is worked by the Government Railway Department. *(b) The Mount Lyell Mining and Railway Company.* These lines were primarily intended for the development of mining districts; they run from Regatta Point to Queenstown, and from Linda to Kelly Basin, and have a total length of fifty-two miles.

16. **Guaranteed Railways.**—A new departure has been recently made in Queensland in the policy of railway construction under the Railways Guarantee Act of 1895, which provides for the construction by the Government of a railway through any district conditional on the ratepayers of the district agreeing to pay up to half the amount of any deficiency in working expenses, together with interest at 4 per cent. on the capital cost of the line during the first fourteen years after its completion. In case of a net revenue accruing during any year half is retained by the Government, while the other half is paid to the local authority to be distributed among the ratepayers, and as soon as the working of the line has provided a surplus for three consecutive years the Government may cancel the agreement. Up to the 30th June, 1906, four lines had been constructed and opened

for traffic under this Act, and though the results, with the exception of the line from Kabra to Mount Morgan, have not in past years been financially successful, their position is generally improving as the traffic increases. The following table gives particulars of the four lines referred to for the year ended the 30th June, 1906:—

QUEENSLAND.—PARTICULARS OF WORKING OF GUARANTEED RAILWAYS, 1905 TO 1906.

Lines.	Miles Open.	Train Mileage.	Capital Expenditure (including Rolling-stock).	Gross Revenue.	Expenditure.	Profit or Loss after Paying Working Expenses.		Percentage Expenses to Earnings.	Net Profit or Loss after Payment of Working Expenses and Interest at 4 per cent.	
						Profit.	Loss.		Profit.	Loss.
	Miles.	No.	£	£	£	£	£	%	£	£
Hendon to Allora ...	3.6	6,601	12,889	1,927	907	1,020	...	47.07	504	...
Mayne to Enoggera...	3.7	31,398	48,484	2,348	3,070	...	722	130.75	...	2,662
Colton to Pialba ...	16.6	23,991	46,494	3,651	2,702	949	...	74.01	...	911
Kabra to Mt. Morgan	12.9	65,265	86,092	17,289	9,232	8,057	...	53.40	4,613	...
Total ...	36.8	127,255	193,959	25,215	15,911	9,304	...	63.1	1,544	...

The proportion of deficiencies paid by guarantors during the financial years 1903-4 and 1904-5 was in the case of the line from Mayne to Enoggera £870, and in respect of the Colton-Pialba line £777.

17. **Cost of Construction and Equipment of Government Railways.**—The total cost of construction and equipment of the State railways of the Commonwealth at the 30th June, 1907, amounted to £135,448,923, or to an average of £9754 per mile open for traffic. Particulars as to the capital expenditure incurred in each State are given in the following table:—

GOVERNMENT RAILWAYS.—TOTAL COST OF CONSTRUCTION AND EQUIPMENT IN EACH STATE AND IN THE COMMONWEALTH UP TO THE 30TH JUNE, 1907.

State.	Length of Line Open.	Total Cost of Construction and Equipment.	Average Cost per Mile Open.	Cost per Head of Population.
	Miles.	£	£	£
New South Wales	3,453	44,700,230	12,945	28.82
Victoria	3,396	41,533,136	12,235	33.58
Queensland	3,137	21,839,081	6,962	40.27
South Australia	1,832	13,699,029	7,491	35.73
Northern Territory	145½	1,180,395	8,117	330.64
Western Australia	1,764	10,300,938	5,840	39.01
Tasmania	462½	3,943,359	8,517	22.30
Commonwealth	14,190	137,196,168	9,669	32.99

It will be seen that the lowest average cost per mile open is in Western Australia, and is only £5840, which is less than one-half of the highest average cost, namely, £12,945 in New South Wales, compared with an average of £9669 for the whole Commonwealth. In Western Australia there have been comparatively few engineering difficulties to contend with, and also the system has been adopted in that State of giving contractors the right to carry traffic during the period of their contracts, with the result that, at all events in all goldfields railway contracts, the cost of construction has been considerably lessened.

(i.) *Reduction of Cost per Mile in Recent Years.* The average cost per mile of the lines constructed lately in the Commonwealth is very much less than the figure given in the above table, in consequence of the construction of light "pioneer" lines, which have already been referred to, and which it was originally considered in New South Wales could be laid down at a cost of £1750 per mile (exclusive of stations and bridges). It should also be remembered that in the early days of railway construction there were considerable engineering difficulties to overcome, and that labour was scarce and dear. Since 1891 over one thousand miles of the "pioneer" lines have been opened in New South Wales, the average cost ranging from £1986 to £7458 per mile, according to the difficulties met in the country traversed. The lowest cost per mile for any line previously constructed had been that of the line from Nyngan to Cobar, the average cost of which was £3725. In Victoria also the cost of construction has been greatly reduced in recent years. The total cost of the narrow gauge (2 ft. 6 in.) lines, having a length of eighty-one and a half miles, was only £167,316, which gives an average cost per mile of only £2053. In the other States also the cost of construction per mile has been reduced by building light railways as cheaply as possible. Fairly substantial permanent way is laid down with reduced ballast, and, as settlement progresses and traffic increases, the road is strengthened and the stations and siding accommodation enlarged. The following table gives examples of some of the more expensive lines, most of which were built in the early days, while the next succeeding table gives instances of lines which have been constructed in more recent years at a comparatively small cost per mile:—

GOVERNMENT RAILWAYS.—EXAMPLES OF LINES CONSTRUCTED AT LARGE CAPITAL EXPENDITURE PER MILE OPEN.

Line.	Gauge.		Length.	Total Cost.	Average Cost per Mile.	Date of Opening.
	ft.	in.	Miles.	£	£	
NEW SOUTH WALES—						
Penrith to Bathurst	4	8½	111⅞	2,706,247	24,186	1876
Sydney to Kiama	4	8½	72⅓	2,000,405	27,615	1887
Homebush to Waratah ...	4	8½	95½	2,809.217	29,420	1887
VICTORIA—						
Melbourne to Bendigo ...	5	3	101	4,821,514	47,790	1862
Geelong to Ballarat	5	3	45½	1,898,922	35,802	1862

GOVERNMENT RAILWAYS.—EXAMPLES OF LINES CONSTRUCTED AT SMALL CAPITAL EXPENDITURE PER MILE OPEN.

Line.	Gauge.		Length.	Total Cost.	Average Cost per Mile.	Date of Opening.
	ft.	in.	Miles.	£	£	
NEW SOUTH WALES—						
Parkes to Condobolin	4	8½	62¾	124,737	1,986	1898
Dubbo to Coonamble	4	8½	95⅞	228,558	2,384	1903
VICTORIA—						
Wangaratta to Whitfield ...	2	6	30½	38,687	1,269	1899
Boort to Quambatook... ...	5	3	22	43,020	1.959	1894
SOUTH AUSTRALIA—						
Wandilo to Glencoe	3	6	9⅛	15,187	1,664	1904
Mount Gambier to Narracoorte...	3	6	63½	211,610	3,330	1887
QUEENSLAND—						
Dalby to Bell	3	6	23½	28,677	1,220	1906
Hughenden to Richmond ...	3	6	70½	110,779	1,574	1904

(ii.) *Proposed Adoption of Special Locomotives for Cheap Pioneer Lines.* The adaptation of the steam locomotive to the working of steep gradients and sharp curves has progressed during late years, so that very steep gradients, which were at one time considered to be only workable by a rack or grip rail with special complicated engines running at very slow speeds, are now being worked by adhesion locomotives. In view of the great importance of supplying a cheap and effective pioneer railway service to many parts where the steep and broken nature of the country would involve great expenditure on lines built to suit the standard classes of locomotives, the Standing Committee on Railways in Victoria has recently considered the advisability of adopting a special form of geared locomotive which would not be suitable for high speeds, but which could be worked on steep gradients and on curves of small radius. It is suggested that by the adoption of locomotives of this type considerable saving in cost could be made, due to (*a*) shortening of distance by use of steeper grades in places where easier grades would necessitate long detours. (*b*) Reduction of sub-grade works, *i.e.*, earthworks, culverts, trestles, etc., by use of steeper grades and sharper curves to keep the formation nearer to the natural surface. (*c*) Cheaper track by using lighter rails and less ballast than necessary for standard adhesion locomotives.

(iii.) *Capital Cost of Construction and Equipment, Total and per Mile Open, 1901-7.* The increase in the total capital cost of construction and equipment of Government railways in each State and in the Commonwealth on the 30th June in each year, from 1901 to 1907, inclusive, is shewn in the following table:—

GOVERNMENT RAILWAYS.—CAPITAL COST OF CONSTRUCTION AND EQUIPMENT IN STATES AND IN COMMONWEALTH UP TO THE 30TH JUNE IN EACH YEAR, 1901 TO 1907.

State.	1901.	1902.	1903.	1904.	1905.	1906.	1907.
			TOTAL COST.				
	£	£	£	£	£	£	£
New South Wales	38,932,781	40,565,073	41,654,977	42,238,517	43,062,550	43,626,068	44,700,230
Victoria	40,145,404	40,613,784	40,974,493	41,216,708	41,279,045	41,398,037	41,583,136
Queensland ...	19,739,495	20,119,143	20,302,177	20,887,585	21,610,980	21,741,226	21,839,061
South Australia	13,156,291	13,275,037	13,400,796	13,517,727	13,587,406	13,610,520	13,699,029
N. Territory ...	1,170,484	1,160,757	1,175,056	1,180,584	1,179,059	1,180,424	1,180,395
Western Australia	7,098,239	7,410,426	8,141,782	8,955,929	9,806,458	9,965,940	10,300,938
Tasmania ...	3,799,098[1]	3,840,747[1]	3,883,729[1]	3,901,414	3,920,508	3,926,713	3,943,359
Commonwealth	124,041,792	126,984,967	129,533,010	131,948,459	134,448,006	135,448,928	137,196,168
			COST PER MILE OPEN.				
	£	£	£	£	£	£	£
New South Wales	13,690	13,405	13,270	12,889	13,125	12,869	12,945
Victoria	12,402	12,300	12,112	12,191	12,162	12,197	12,235
Queensland ...	7,047	7,183	7,489	7,134	6,989	6,931	6,962
South Australia	7,577	7,646	7,718	7,785	7,783	7,797	7,491
N. Territory ...	8,049	7,982	8,080	8,118	8,104	8,117	8,117
Western Australia	5,239	5,449	5,371	5,812	6,111	6,182	5,840
Tasmania ...	8,295	8,313	8,406	8,445	8,468	8,481	8,517
Commonwealth	9,861	9,896	9,898	9,792	9,795	9,754	9,669

[1] To the 31st December, 1901, 1902, and 1903 respectively.

(iv.) *Loan Expenditure on Railways and Tramways, 1901 to 1906.* The subjoined table shews the total loan expenditure in railways and tramways in each State during each financial year from 1901 to 1906. Figures shewing loan expenditures on railways only are not available:—

GOVERNMENT RAILWAYS AND TRAMWAYS.—EXPENDITURE FROM LOANS IN EACH STATE AND IN THE COMMONWEALTH, 1901 TO 1906.

State.	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.
	£	£	£	£	£	£
New South Wales	2,243,672	1,683,755	805,520	501,709	529,251	421,741
Victoria ...	483,325	371,330	258,090	171,837	77,968	73,843
Queensland ...	751,451	695,632	388,255	119,651	157,537	554,783
South Australia ...	121,907	143,970	120,152	101,195	70,451	47,121
Western Australia	578,985	1,059,418	443,339	348,327	219,937	329,527
Tasmania ...	*80,948	*56,731	*37,450	†19,655	6,168	15,153
Commonwealth ...	4,260,288	4,010,836	2,052,806	1,262,374	1,061,312	1,442,168

* For the calendar years 1901, 1902, and 1903 respectively. † For the eighteen months ended 30th June, 1905.

The following statement shews the total loan expenditure to the 30th June, 1907:—

GOVERNMENT RAILWAYS AND TRAMWAYS.—TOTAL LOAN EXPENDITURE IN EACH STATE AND IN THE COMMONWEALTH TO THE 30TH JUNE, 1907.

State, etc. ...	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
Expenditure ...	49,996,323	38,895,190	24,176,015	13,940,927	9,948,498	4,143,911	141,100,864

18. **Revenue and Working Expenses.**—The following table shews the amounts of gross revenue, working expenses, and excess of revenue over expenditure per mile of line worked and per train mile run in each State for the year ended 30th June, 1907:—

GOVERNMENT RAILWAYS.—REVENUE, WORKING EXPENSES, AND EXCESS OF REVENUE OVER WORKING EXPENSES, PER MILE WORKED AND PER TRAIN MILE, IN EACH STATE AND IN COMMONWEALTH FOR YEAR ENDED 30TH JUNE, 1907.

State.	Average Mileage work'd.	Number of Train Miles Run.	Revenue.			Working Expenses.			Excess of Revenue over W'rkg. Expenses.		
			Gross.	Per Mile w'rkd.	Per Train Mile.	Gross.	Per Mile w'rkd.	Per Train Mile.	Net.	Per Mile w'rkd.	Per Train Mile.
	Miles.	No.	£	£	d.	£	£	d.	£	£	d.
N.S.W. ...	3,428	12,949,068	4,709,406	1,374	87.28	2,499,741	729	46.33	2,209,665	645	40.95
Victoria ...	3,395	10,035,914	4,012,641	1,182	95.96	2,353,303	693	56.28	1,659,338	489	39.68
Queensland	3,137	6,126,136	1,829,673	583	71.68	912,638	291	35.75	917,035	292	35.93
South Aust.	1,815	4,334,243	1,575,368	868	87.23	868,005	478	48.06	707,363	390	39.17
N. Territory	145½	30,901	14,018	96	108.87	13,280	91	103.14	738	5	5 73
West. Aust.	1,676	4,180,796	1,537,333	917	88.25	1,135,907	678	65.21	401,426	240	23.04
Tasmania ...	470	961,379	258,223	549	63.15	185,500	395	45.36	72,723	155	17 78
C'wealth ...	14,066½	38,638,437	13,936,662	991	86.57	7,968,374	566	49.50	5,968,288	424	37.07

(i.) *Traffic Receipts and Revenue from Other Sources.* The gross revenue is composed of (*a*) receipts from coaching traffic, including the carriage of mails, horses, parcels, etc., by passenger trains; (*b*) receipts from the carriage of goods and live stock, and (*c*) rents and miscellaneous items. The following table shews the amount derived from each of these sources for the year ended the 30th June, 1907, and the respective percentages of the whole revenue:—

GOVERNMENT RAILWAYS. — AMOUNT AND PERCENTAGE OF GROSS REVENUE FROM DIFFERENT SOURCES IN EACH STATE AND IN COMMONWEALTH FOR THE YEAR ENDED 30TH JUNE, 1907.

State.	Total Revenue.	Coaching Traffic Revenue.	Coaching Traffic Percentage of Total.	Goods and Live Stock.	Goods, etc., Percentage of Total.	Rents and Miscellaneous Items.	Rents, etc., Percentage of Total.
	£	£		£		£	
N.S.W. ...	4,709,406	1,736,206	36.86	2,922,843	62.07	50,357	1.07
Victoria ...	4,012,641	1,862,660	46.42	2,081,515	51.87	68,466	1.71
Queensland ...	1,829,673	613,601	33.54	1,180,862	64.54	35,210	1.92
South Australia	1,575,368	452,278	28.71	1,083,504	68.77	39,586	2.52
N. Territory ...	14,018	3,176	22.66	8,412	60.00	2,430	17.33
West. Australia	1,537,333	497,414	32.35	992,111	64.53	47,808	3.12
Tasmania ...	258,223	117,928[1]	45.66	119,701	46.36	20,594[2]	7.98
C'wealth ...	13,936,662	5,283,263	37.91	8,388,948	60.20	264,451	1.89

1. Exclusive of revenue from carriage of mails. 2. Including revenue from carriage of mails.

19. **Gross Revenue, Total, per Average Mile Worked, and per Train-mile Run, 1901 to 1907.**—The following table shews the total revenue from all sources, the revenue per average mile worked, and the revenue per train-mile run in each State during each financial year from 1901 to 1907, inclusive :—

GOVERNMENT RAILWAYS.— GROSS REVENUE, TOTAL, PER AVERAGE MILE WORKED, AND PER TRAIN-MILE, 1901 TO 1907.

State.	1900-1.	1901-2.	1902-3	1903-4.	1904-5.	1905-6.	1906-7.
TOTAL GROSS REVENUE.							
	£	£	£	£	£	£	£
New South Wales	3,573,779	3,668,686	3,314,893	3,436,418	3,684,016	4,234,791	4,709,406
Victoria	3,337,797	3,367,843	3,046,858	3,438,141	3,582,266	3,787,619	4,012,641
Queensland	1,316,936	1,382,179	1,234,230	1,305,552	1,413,439	1,546,083	1,829,673
South Australia	1,236,616	1,085,175	1,076,612	1,160,639	1,273,321	1,349,765	1,575,368
Northern Territory	13,845	12,522	11,298	17,006	15,429	14,897	14,018
Western Australia	1,353,704	1,521,429	1,553,485	1,588,084	1,610,129	1,634,444	1,537,333
Tasmania	*205,791	*233,211	*247,683	†256,694	243,556	241,188	258,223
Commonwealth ...	11,038,468	11,271,045	10,485,059	11,202,529	11,822,156	12,808,787	13,936,662
GROSS REVENUE PER AVERAGE MILE WORKED.							
	£	£	£	£	£	£	£
New South Wales	1,268	1,242	1,078	1,066	1,123	1,258	1,374
Victoria	1,034	1,031	914	1,020	1,059	1,116	1,182
Queensland	470	493	444	462	461	497	583
South Australia	712	625	620	668	730	773	868
Northern Territory	95	86	78	117	106	102	96
Western Australia	999	1,122	1,083	1,085	1,027	1,017	917
Tasmania	*447	*498	*528	†547	518	513	549
Commonwealth ...	880	886	808	842	866	926	991
GROSS REVENUE PER TRAIN-MILE RUN.							
	d.	d.	d.	d.	d.	d.	d.
New South Wales	79.69	75.58	68.89	79.30	84.46	85.67	87.28
Victoria	72.39	71.62	71.09	89.96	95.28	96.79	95.96
Queensland	54.35	58.55	59.87	67.43	68.98	70.26	71.63
South Australia	67.56	62.07	68.53	74.50	80.99	83.59	87.23
Northern Territory	109.75	99.27	89.13	129.38	120.61	117.87	108.87
Western Australia	78.74	81.00	80.85	82.96	90.18	89.98	88.25
Tasmania	*55.14	*61.99	*63.80	†65.01	61.80	61.19	63.15
Commonwealth ...	71.43	70.74	69.66	80.18	84.84	85.99	86.57

* For the financial years 1901, 1902, and 1903 respectively.
† Estimated for a period of twelve months, ended the 30th June, 1904.

20. **Coaching Traffic Receipts per Average Mile Worked, per Passenger-train Mile, and per Passenger Journey.**—The subjoined table shews the receipts from coaching traffic per average mile of line worked, per passenger-train mile, and per passenger journey in each State and in the Commonwealth for the year ended the 30th June, 1907:—

GOVERNMENT RAILWAYS.—COACHING TRAFFIC RECEIPTS PER MILE OPEN, PER PASSENGER JOURNEY, AND PER PASSENGER-TRAIN MILE, 1907.

State.	Number of Passenger Journeys.	Number of Passenger-Train Miles.	Coaching Traffic Receipts. Gross.	Per Average Mile Worked.	Per Passenger Journey.	Per Passenger Train Mile.
	No.	No.	£	£	d.	d.
New South Wales ...	41,413,084	5,654,903	1,736,206	506	10.06	73.69
Victoria	69,920,583	*5,703,014	1,862,660	548	6.39	78.38
Queensland ...	9,301,542	2,024,933	613,601	195	15.83	72.72
South Australia ...	11,497,802	1,667,324	452,278	249	9.44	65.10
Northern Territory...	3,205	10,719	3,176	22	237.82	71.11
Western Australia ...	13,180,161	†2,240,837	497,414	296	9.06	53.27
Tasmania	951,823	‡357,076	117,928	250	29.73	79.26
Commonwealth ...	146,268,200	17,658,806	5,283,263	375	8.67	71.80

* The returns include 2,352,484 mixed-train mileage, which has been divided between passenger-train miles and goods-train miles in the proportion of one-third and two-thirds respectively. † The returns include 76,899 mixed-train mileage, which has been divided as just stated. ‡ The returns include 684,228 mixed-train mileage, which has been divided as just stated.

21. **Number of Passenger Journeys and Coaching Traffic Receipts, 1901 to 1907.**—The following tables give particulars of the number of passenger journeys and of the coaching traffic receipts in each State and in the Commonwealth during each year from 1901 to 1907, inclusive. The coaching traffic receipts include revenue from the carriage by passenger trains of parcels, excess-luggage, mails, etc.:—

GOVERNMENT RAILWAYS.—COACHING TRAFFIC RECEIPTS, TOTAL, AND PER PASSENGER JOURNEY, 1900-1 TO 1906-7.

State.	1900-1.	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.
GROSS RECEIPTS FROM COACHING TRAFFIC, 1900-1 TO 1906-7.							
	£	£	£	£	£	£	£
New South Wales	1,370,530	1,403,744	1,405,888	1,442,733	1,428,190	1,563,261	1,736,206
Victoria	1,625,903	1,648,381	1,525,349	1,561,973	1,598,354	1,719,718	1,862,660
Queensland	536,462	513,257	467,594	495,375	477,859	529,139	613,601
South Australia	359,172	369,677	342,037	367,067	379,034	402,339	452,278
Northern Territory	3,415	3,032	2,913	2,803	3,469	2,929	3,176
Western Australia	407,319	442,719	449,677	484,486	502,671	506,598	497,414
Tasmania*	†88,313	†99,116	†106,388	‡111,724	106,922	110,293	117,928
Commonwealth	4,391,114	4,479,926	4,298,846	4,466,161	4,496,499	4,834,262	5,283,263
AVERAGE RECEIPTS PER PASSENGER JOURNEY, 1900-1 TO 1906-7.							
	d.	d.	d.	d.	d.	d.	d.
New South Wales	11.23	10.91	10.42	10.27	9.75	10.00	10.06
Victoria	7.13	6.89	6.96	7.27	6.42	6.34	6.39
Queensland	27.05	26.59	27.72	28.68	28.53	15.46	15.83
South Australia	9.74	9.34	9.05	9.05	9.22	9.01	9.44
Northern Territory	200.05	193.80	192.53	184.15	198.26	246.48	237.82
Western Australia	14.33	13.02	11.85	11.37	10.19	9.48	9.06
Tasmania*	†27.26	†31.24	†31.04	‡30.71	31.26	30.76	29.73
Commonwealth	10.02	9.64	9.36	9.40	8.88	8.57	8.67

* Exclusive of revenue derived from the carriage of mails. † For the calendar years of 1901, 1902 and 1903 respectively. ‡ Estimated for a period of twelve months ended the 30th June, 1904.

22. Goods and Live-Stock Traffic Receipts per Mile Worked, per Goods-Train Mile, and per Ton Carried.—The following table shews the gross receipts from goods and live-stock traffic per mile worked, per goods-train mile, and per ton carried for the year ended the 30th June, 1907:—

GOVERNMENT RAILWAYS.—GOODS AND LIVE-STOCK TRAFFIC RECEIPTS PER MILE WORKED, PER GOODS-TRAIN MILE, AND PER TON CARRIED, 1907.

State.	Goods and Live-Stock Tonnage.	Number of Goods-Train Miles.	Goods and Live-Stock Traffic Receipts.			
			Gross.	Average per Mile Worked.	Per Goods-Train Mile.	Per Ton Carried.
	Tons.	No.	£	£	d.	d.
New South Wales ...	8,793,832	7,294,165	2,922,843	852	96.17	79.77
Victoria	3,965,792	4,332,900†	2,081,515	613	135.29	125.96
Queensland ...	2,261,299*	4,101,203	1,180,862	376	69.10	126.15
South Australia ...	2,042,939	2,666,919	1,083,504	597	97.51	127.28
Northern Territory ...	3,243	20,182	8,412	58	100.03	622.53
Western Australia ...	2,330,303	1,939,959‡	992,111	592	122.74	102.18
Tasmania	428,387*	624,303§	119,701	254	46.01	67.06
Commonwealth ...	19,825,795	20,979,631	8,388,948	596	95.97	101.55

* Exclusive of live-stock tonnage. † The returns include 2,352,484 mixed-train mileage, which has been divided between passenger-train miles and goods-train miles in the proportion of one-third and two-thirds respectively. ‡ The returns include 761,899 mixed-train mileage, which has been divided as just stated. § The returns include 684,228 mixed-train mileage, which has been divided as just stated.

The following table shews the gross receipts derived from goods and live-stock traffic in each State during each financial year from 1901 to 1907:—

GOVERNMENT RAILWAYS.—GOODS AND LIVE-STOCK TRAFFIC RECEIPTS, 1900-1 TO 1906-7.

State.	1900-1.	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.
	£	£	£	£	£	£	£
N.S.W. ...	2,203,249	2,264,942	1,909,005	1,993,680	2,213,105	2,628,076	2,922,843
Victoria ...	1,711,894	1,719,462	1,454,770	1,792,978	1,918,793	2,001,437	2,081,515
Queensland ...	780,474	868,922	766,636	810,177	899,984	982,820	1,180,862
South Australia	843,019	681,045	703,522	761,298	860,037	910,106	1,083,504
N. Territory ...	8,892	7,996	7,000	11,868	9,524	9,443	8,412
West. Australia	946,385	1,037,099	1,046,540	1,066,949	1,061,364	1,081,472	992,111
Tasmania ...	*98,713	*116,061	*121,129	†124,472	116,938	111,042	119,701
Commonwealth	6,592,626	6,695,527	6,008,602	6,561,422	7,079,745	7,724,396	8,388,948

* For the calendar years 1901, 1902, and 1903 respectively.
† Estimated for a period of twelve months ended the 30th June, 1904.

23. Working Expenses.—The following table shews the total annual expenditure, comprising expenses on (*a*) maintenance of way, works, and buildings; (*b*) locomotive power; (*c*) carriages and waggons—renewals and repairs; (*d*) traffic expenses; (*e*) compensation; and (*f*) general and miscellaneous charges; and also the percentage of these expenditures upon the corresponding gross revenues in each State from 1901 to 1907:—

GOVERNMENT RAILWAYS.—TOTAL WORKING EXPENSES AND PERCENTAGES OF WORKING EXPENSES UPON GROSS REVENUES, 1901 TO 1907.

State.	1900-1.	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.
TOTAL WORKING EXPENSES.							
	£	£	£	£	£	£	£
New South Wales ...	2,043,201	2,267,369	2,266,299	2,258,940	2,192,147	2,308,384	2,499,741
Victoria*	2,075,239	2,166,119	2,032,067	2,022,403	2,222,279	2,216,202	2,353,308
Queensland	1,057,981	992,751	863,382	811,951	814,744	863,356	912,638
South Australia ...	729,039	689,517	624,511	675,395	736,791	764,385	868,005
Northern Territory ...	25,280	34,649	12,812	13,219	13,069	13,854	13,280
Western Australia ...	1,044,920	1,256,370	1,247,873	1,179,624	1,256,003	1,201,753	1,135,907
Tasmania	†173,400	†173,292	†166,355	‡166,029	171,630	172,601	185,500
Commonwealth ...	7,149,060	7,580,067	7,213,319	7,127,561	7,406,663	7,540,535	7,968,374
PERCENTAGE OF WORKING EXPENSES TO GROSS EARNINGS.							
	%	%	%	%	%	%	%
New South Wales ..	57.17	61.80	68.37	65.74	59.50	54.51	53.08
Victoria*	62.17	64.32	66.69	58.82	62.04	58.51	58.65
Queensland	80.34	71.83	69.95	62.19	57.64	55.84	49.88
South Australia ...	58.95	63.54	58.01	58.19	57.86	56.63	55.10
Northern Territory ...	182.59	276.70	113.40	77.73	84.70	93.00	94.74
Western Australia ...	77.19	82.58	80.33	74.28	78.01	73.52	73.89
Tasmania	†84.26	†74.31	†67.16	‡64.68	70.47	71.56	71.84
Commonwealth ...	64.76	67.25	68.80	63.62	62.65	58.87	57.18

* Including amounts paid for pensions and gratuities, and also special expenditures and charges for belated repairs and in reduction of deficiences as follows:—For the year 1900-1, £111,943; for 1901-2, £115,244; for 1902-3, £196,137; for 1903-4, £220,092; for 1904-5, £351,141; for 1905-6, £217,179; and for 1906-7, £276,630. † For the calendar years 1901, 1902, and 1903 respectively. ‡ Estimated for a period of twelve months ended the 30th June, 1904.

24. **Working Expenses per Average Mile Worked and per Train Mile Run, 1901 to 1907.**—The following table shews the working expenses per average mile worked and per train mile run in each State for the years 1901 to 1907, inclusive:—

GOVERNMENT RAILWAYS.—WORKING EXPENSES PER AVERAGE MILE WORKED AND PER TRAIN MILE RUN, 1901 TO 1907.

State.	1900-1.	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.
WORKING EXPENSES PER AVERAGE MILE WORKED.							
	£	£	£	£	£	£	£
New South Wales ...	725	768	737	701	668	686	729
Victoria	643	663	609	560	657	653	693
Queensland	378	354	311	287	266	278	291
South Australia ...	420	397	360	389	422	438	478
Northern Territory ...	174	238	88	91	90	95	91
Western Australia ...	771	927	870	768	801	748	678
Tasmania	*377	*370	*355	†354	365	367	395
Commonwealth ...	570	596	556	536	542	545	566
WORKING EXENSES PER TRAIN MILE RUN.							
	d.	d.	d.	d.	d.	d.	d.
New South Wales ...	45.56	46.71	47.10	52.13	50.26	46.70	46.33
Victoria	45.01	46.07	47.41	52.92	59.11	56.63	56.28
Queensland	43.66	42.05	41.88	41.93	39.76	39.23	35.75
South Australia ...	39.83	39.44	39.75	43.35	46.87	47.34	48.06
Northern Territory ...	200.39	274.67	101.07	100.57	102.16	109.15	103.14
Western Australia ...	60.78	66.89	64.95	61.62	70.34	66.16	65.21
Tasmania	*46.46	*46.06	*42.85	†42.05	43.55	43.79	45.36
Commonwealth ...	46.26	47.58	47.92	51.01	53.15	50.62	49.50

* For the financial years 1901, 1902, and 1903 respectively. † Estimated for a period of twelve months ended the 30th June, 1904.

25. Distribution of Working Expenses, 1901 to 1907.—The subjoined table shews the distribution of working expenses, among four chief heads of expenditure, for each year from 1901 to 1907, inclusive:—

GOVERNMENT RAILWAYS.—DISTRIBUTION OF WORKING EXPENSES, 1901 TO 1907.

State.	1900-1.	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.
MAINTENANCE.							
	£	£	£	£	£	£	£
New South Wales ...	484,750	521,983	486,596	519,389	491,164	539,700	598,290
Victoria	518,488	501,938	437,840	448,959	502,022	572,297	589,452
Queensland	408,551	355,615	292,951	277,913	277,672	298,100	296,160
South Australia ...	185,291	166,691	130,297	164,066	206,894	203,487	273,686
Northern Territory ...	18,206	29,001	6,981	7,037	7,392	7,966	7,334
Western Australia ...	193,573	246,931	265,548	264,430	344,177	298,250	265,771
Tasmania	*59,897	*58,612	*51,957	†49,286	54,517	53,416	57,390
Commonwealth ...	1,868,756	1,880,771	1,681,170	1,731,080	1,883,838	1,958,216	2,082,098
LOCOMOTIVES AND ROLLING STOCK.							
New South Wales ...	936,103	1,059,814	1,089,829	1,054,168	1,023,551	1,056,936	1,182,268
Victoria	793,345	855,464	762,715	719,530	763,171	788,325	844,941
Queensland	395,876	389,766	343,675	317,759	313,804	337,316	358,010
South Australia ...	362,567	343,572	317,217	343,487	360,150	396,028	404,664
Northern Territory ...	4,454	3,210	3,451	3,520	2,963	3,310	3,120
Western Australia ...	497,188	670,485	642,808	581,655	577,002	566,420	534,826
Tasmania	*63,579	*63,792	*62,376	†64,473	63,542	65,831	72,985
Commonwealth ...	3,053,112	3,386,103	3,222,071	3,084,598	3,104,183	3,204,166	3,350,814
TRAFFIC EXPENSES.							
New South Wales ...	537,227	588,938	605,210	601,634	596,313	631,388	682,927
Victoria	609,000	640,442	592,897	586,015	562,370	588,123	593,248
Queensland	232,557	226,237	207,803	196,806	204,858	218,314	237,994
South Australia ...	164,589	162,626	151,738	151,697	152,627	157,485	171,721
Northern Territory ...	2,309	2,108	1,935	2,300	2,362	171,721	2,460
Western Australia ...	296,045	306,409	312,364	306,998	302,234	305,188	300,742
Tasmania	*41,138	*42,416	*42,820	†43,318	43,808	44,585	45,795
Commonwealth ...	1,882,865	1,969,176	1,914,267	1,888,768	1,864,572	1,947,269	2,034,887
OTHER CHARGES.							
New South Wales ...	85,121	96,634	84,664	83,749	81,119	80,360	91,256
Victoria‡	154,406	168,275	238,635	267,899	394,716	267,457	325,662
Queensland	20,997	21,133	19,453	19,473	18,410	19,626	21,474
South Australia ...	16,592	16,628	16,259	16,144	17,120	17,385	17,934
Northern Territory ...	311	330	445	362	352	342	356
Western Australia ...	58,114	32,545	27,153	26,541	32,590	36,945	34,568
Tasmania	*8,786	*8,472	*9,202	†8,952	9,763	8,769	9,330
Commonwealth ...	344,327	344,017	395,811	423,120	554,070	430,884	500,580

* For the calendar years 1901, 1902, and 1903 respectively.

† Estimated for a period of twelve months ended the 30th June, 1904.

‡ See Footnote * to the table given on page 576 shewing total amounts of working expenses.

26. Analysis of Working Expenses, 1907.—A comparative analysis is given on page 578 of the working expenses of the Government railways in each State and in the Commonwealth; in this statement the total expenses are given, as well as the expenses per train mile and per mile worked, and also the percentage of expenses to gross revenue:—

GOVERNMENT RAILWAYS.—ANALYSIS OF WORKING EXPENSES, 1907.

Expenditure on :—		N.S.W.	Victoria.	Q'land.	S. A.	N. T.	W. Aust.	Tas.	C'wealth.
MAINTENANCE OF WAYS AND WORKS—									
Total	£	593,290	589,452	296,160	273,686	7,334	265,771	57,390	2,082,098
Per train mile ...	d.	11.00	14.10	11.56	15.15	56.96	15.26	14.03	12.98
Per mile worked...	£	173	174	94	151	51	159	122	148
Per cent. of gross revenue		12.60	14.69	16.13	17.36	52.34	17.89	22.23	14.94
LOCOMOTIVE POWER—									
Total	£	939,260	455,593	289,253	321,746	2,227	398,558	72,985	2,474,622
Per train mile ...	d.	17.41	10.90	11.34	17.81	17.29	22.59	17.85	15.37
Per mile worked...	£	274	134	92	177	15	285	156	176
Per cent. of gross revenue		19.94	11.35	15.81	20.42	15.88	25.61	28.26	17.76
ROLLING STOCK REPAIRS AND RENEWALS—									
Total	£	193,008	389,348	68,757	82,918	893	141,268	Included in Loco. Power.	876,192
Per train mile ...	d.	3.58	9.31	2.69	4.59	6.98	8.12		5.44
Per mile worked...	£	56	114	22	45	6	84		62
Per cent. of gross revenue		4.10	9.70	3.76	5.26	6.39	9.18		6.29
TRAFFIC EXPENSES—									
Total	£	682,927	593,248	237,994	171,721	2,460	300,742	45,795	2,034,887
Per train mile ...	d.	12.66	14.19	9.32	9.52	19.20	17.26	11.19	12.64
Per mile worked...	£	199	174	56	95	17	179	97	145
Per cent. of gross revenue		14.50	14.78	13.01	10.91	17.57	19.56	17.73	14.60
OTHER CHARGES—									
Total	£	*91,256	†325,662	21,474	‡17,984	356	§34,568	9,330	500,580
Per train mile ...	d.	1.68	7.78	0.84	0.99	2.76	1.98	2.29	3.12
Per mile worked...	£	27	95	7	10	2	21	20	35
Per cent. of gross revenue		1.94	8.18	1.17	1.15	2.56	2.25	3.62	3.59
TOTAL EXPENSES ...	£	2,499,741	2,353,308	912,638	868,005	13,280	1,135,907	185,500	7,968,374
Per train mile ...	d.	46.33	56.28	35.75	48.06	103.14	65.21	45.36	49.50
Per average mile worked	£	729	698	291	478	91	678	395	566
Per cent. of gross revenue		53.08	58.65	49.88	55.10	94.74	73.80	71.84	57.18

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* Including £9979 compensation for injuries to persons and damage to property; £9002 for gratuities to widows and children of employés, and payments to staff retired; and £1690 for fire insurance. † Includes £165,749 for special expenditure and charges, and £110,881 for pensions and gratuities. ‡ Includes £2190 for compensation. § Includes £7508 for compensation.

27. **Net Revenue, Total and per Cent. of Capital Cost, 1901 to 1907.**—The table given hereunder shews the net sums available to meet interest charges, and also the percentage of such sums upon the capital cost of construction and equipment, in each State for the years 1901 to 1907, inclusive:—

GOVERNMENT RAILWAYS.—NET REVENUE AND PERCENTAGE OF NET REVENUE UPON CAPITAL COST, 1901 TO 1907.

State.	1900-1.	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.
NET REVENUE.							
	£	£	£	£	£	£	£
New South Wales ...	1,530,578	1,401,317	1,048,594	1,177,478	1,491,869	1,926,407	2,209,665
Victoria* ...	1,262,558	1,201,724	1,014,771	1,415,788	1,359,987	1,571,417	1,659,898
Queensland ...	258,955	389,428	370,848	498,601	598,696	682,727	917,035
South Australia ...	507,577	395,658	452,101	485,244	536,530	585,380	707,363
Northern Territory ...	— 11,485	— 22,127	— 1,514	3,787	2,360	1,043	738
Western Australia ...	308,784	265,059	305,612	408,460	354,126	432,691	401,426
Tasmania ...	†32,391	†59,919	†81,328	‡90,665	71,926	68,587	72,723
Commonwealth ...	3,889,408	3,690,978	3,271,740	4,074,968	4,415,493	5,268,252	5,968,288

PERCENTAGE OF NET REVENUE AFTER PAYMENT OF WORKING EXPENSES TO CAPITAL EXPENDITURE, FROM 1900-1 TO 1906-7.

	per cent.	per cent.	per cent.	per cent.	per cent.	per cent.	per cent.
New South Wales ...	3.93	3.45	2.52	2.78	3.46	4.42	4.94
Victoria* ...	3.14	2.96	2.48	3.43	3.29	3.80	4.00
Queensland ...	1.31	1.94	1.83	2.36	2.77	3.14	4.20
South Australia ...	3.86	2.98	3.37	3.59	3.95	4.30	5.16
Northern Territory ...	—0.98	—1.91	—0.13	0.32	0.20	0.09	0.06
Western Australia ...	4.35	3.58	3.75	4.56	3.61	4.34	3.90
Tasmania ...	†0.85	†1.56	†2.09	‡2.32	1.83	1.75	1.84
Commonwealth ...	3.14	2.91	2.53	3.09	3.28	3.89	4.35

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* In addition to ordinary working expenses, special expenditures and charges paid out of each year's gross revenue have been deducted; see Footnote * to table given above shewing total working expenses. † For the calendar years 1901, 1902, and 1903 respectively. ‡ Estimated for a period of twelve months ended the 30th June, 1904.

28. **Net Revenue, per Average Mile Worked and per Train Mile Run, 1901 to 1907.**—Tables shewing the gross earnings and the working expenses per average mile worked and per train mile run have been given above. The net earnings, *i.e.*, the excess of gross earnings over working expenses, per average mile worked and per train mile run are shewn in the following tables :—

GOVERNMENT RAILWAYS.—NET REVENUE PER AVERAGE MILE WORKED AND PER TRAIN MILE RUN, 1901 TO 1907.

State.	1900-1.	1901-2.	1902-3.	1903-4.	1904-5.	1905-6	1906-7.
NET REVENUE PER AVERAGE MILE WORKED.							
	£	£	£	£	£	£	£
New South Wales ...	543	475	341	365	455	572	645
Victoria*	391	368	304	420	402	463	489
Queensland... ...	92	139	134	175	195	220	292
South Australia ...	292	228	260	279	308	335	390
Northern Territory ...	— 79	—152	— 10	26	16	7	5
Western Australia ...	228	195	213	266	226	269	240
Tasmania	†70	†128	†173	‡193	153	146	155
Commonwealth ...	310	290	252	306	323	381	424
NET REVENUE PER TRAIN MILE RUN.							
	d.	d.	d.	d.	d.	d.	d.
New South Wales ...	34.13	28.87	21.79	27.17	34.20	38.97	40.95
Victoria*	27.38	25.56	23.68	37.04	36.17	40.16	39.68
Queensland... ...	10.69	16.50	17.99	25.49	29.22	31.02	35.93
South Australia ...	27.73	22.53	28.78	31.15	34.11	36.25	39.17
Northern Territory ...	—90.64	—175.40	—11.94	28.81	18.45	8.22	5.73
Western Australia ...	17.96	14.11	15.91	21.34	19.83	23.82	23.04
Tasmania	†8.68	†15.93	†20.95	‡22.96	18 25	17.40	17.78
Commonwealth ...	25.17	23.16	21.74	29.17	31.69	35.37	37.07

* See footnote to preceding table. † See footnote to preceding table.
‡ See footnote to preceding table.

29. **Interest Returned on Capital Expenditure.**—It will be seen from the figures given in the preceding table that the Government railways in Australia have, on the whole, made a substantial profit during each year since the inception of the Commonwealth, but unfortunately the community does not get the full benefit of this profit, owing to the high rates of interest at which money for railways was borrowed in the early days. Though the average rate during the year ended the 30th June, 1906, was about 3½ per cent., an average does not accurately express the position. At an early period the need of constructing railways for the sole purpose of opening up undeveloped districts was recognised, and lines were built which could not possibly pay for some years to come; as these railways always preceded population the money had to be raised at an almost speculative rate of interest, frequently amounting to 6 per cent., while the more recent loans have been effected at less than 3 per cent., hence the railways have been handicapped by a burdensome interest. At the present time also spur lines are constructed, which can scarcely be expected to instantly return revenue in excess of the expenditure, and so must, for a time at any rate, be a charge on the more developed branches of the railway systems, and tend to increase the ratio of working costs to revenue. It may be noted, however, that although the loans made for expenditure on railway construction and equipment very largely increase the amount of the public debt of the Commonwealth, forming in fact more than half the total debt, the money borrowed has not been sunk in undertakings which give no return, but has been expended

on works which are increasingly reproductive, yielding in most cases a direct return on the capital expended, and representing a greater value than their original cost. In Europe the national debts of various countries have been incurred principally through the expenses of prolonged wars and the money has gone beyond recovery, but in Australia the expenditure is represented to a large extent by public works which pay a direct return, which is, on the whole, greater than the amount of interest due upon capital invested. In addition to the purely commercial aspect of the figures relating to the revenue and expenditure of the Commonwealth railways, it is of great importance that the object with which many of the lines were constructed should be kept clearly in view; the anticipated advantage in building these lines has been the ultimate settlement of the country rather than the direct returns from the railways themselves, and the policy of the State Governments has been to use the railway systems of the Commonwealth for the development of the country's resources, to the maximum extent consistent with the direct payment by the customers of the railways of the cost of working and interest charges. Further, the money has been spent in developing immense agricultural, pastoral, and mineral resources, which add to the wealth of the community, while the benefits conferred in providing a cheap and convenient mode of transit, and in generally furthering the trade and the best interests of the Commonwealth, are incalculable.

(i.) *Profit or Loss after Payment of Working Expenses and Interest, 1901 to 1907.* The net revenue of the Government railways in each State after payment of working expenses is shewn above, on page 578. The following table shews the amount of interest payable on expenditure from loans on the construction and equipment of the railways in each State, the actual profit or loss after deducting working expenses and interest and all other charges from the gross revenue, and the percentage of such profit or loss on the total capital cost af construction and equipment:—

GOVERNMENT RAILWAYS.—INTEREST ON EXPENDITURE FROM LOANS, PROFT OR LOSS AFTER DEDUCTING WORKING EXPENSES AND INTEREST, AND PERCENTAGE OF PROFIT OR LOSS ON TOTAL COST OF CONSTRUCTION AND EQUIPMENT.

State.	1900-1.	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.
AMOUNT OF INTEREST ON RAILWAY LOAN EXPENDITURE.							
	£	£	£	£	£	£	£
New South Wales	1,424,940	1,434,638	1,474,473	1,484,149	1,526,948	1,541,427	1,598,710
Victoria	1,464,809	1,492,695	1,473,532	1,515,755	1,461,994	1,472,397	1,483,284
Queensland	819,084	837,205	859,986	878,006	876,568	881,414	*885,381
South Australia	454,141	469,787	466,655	470,882	468,730	474,965	479,720
Northern Territory	45,757	47,012	46,761	46,838	46,746	46,770	46,746
Western Australia	225,718	234,932	257,195	277,181	308,916	323,564	333,237
Tasmania	141,725	140,550	142,550	143,190	143,890	144,100	148,263
Commonwealth	4,576,169	4,656,819	4,721,152	4,811,001	4,833,792	4,884,627	4,975,341
PROFIT OR LOSS AFTER PAYMENT OF WORKING EXPENSES, INTEREST, AND OTHER CHARGES.†							
	£	£	£	£	£	£	£
New South Wales	+105,638	— 33,321	—425,879	—306,676	— 35,079	+384,980	+610,955
Victoria	—202,251	—290,971	—458,761	—100,017	—102,007	+ 99,020	+176,054
Queensland	—560,029	—447,777	—489,138	—379,465	—277,873	—198,687	+ *31,654
South Australia	+ 53,486	— 74,129	— 14,554	+ 14,362	+ 67,800	+110,425	+227,643
Northern Territory	— 57,192	— 69,139	— 48,275	— 43,061	— 44,386	— 45,727	— 46,006
Western Australia	+ 83,071	+ 30,127	+ 48,417	+131,279	+ 45,210	+109,127	+ 68,189
Tasmania	—109,834	— 80,631	— 61,222	— 52,525	— 71,964	— 75,513	— 75,540
Commonwealth	—686,761	—965,841	—1,449,412	—736,083	—418,299	+383,625	+992,947

* Estimated. † The positive sign indicates a profit, the negative a loss.

PERCENTAGE OF PROFIT OR LOSS TO CAPITAL COST OF CONSTRUCTION AND EQUIPMENT.†

State.	1900-1.	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.
	per cent.	per cent.	per cent.	per cent.	per cent.	per cent.	per cent.
New South Wales	+0.27	—0.08	—1.02	—0.73	—0.08	−0.88	+1.36
Victoria	—0.50	—0.71	—1.12	—0.24	—0.25	+0.24	+0.42
Queensland	—2.84	—2.22	—2.41	—1.81	—1.28	—0.91	+*0.15
South Australia	+0.41	—0.56	—0.11	+0.11	+0.50	+0.81	+1.66
Northern Territory	—4.88	—5.96	—4.10	—3.65	—3.76	—3.87	—0.39
Western Australia	+1.17	+0.41	+0.59	+1.46	+0.47	+1.09	+0.66
Tasmania	—2.87	—2.10	—1.57	—1.34	—1.83	—1.92	—1.92
Commonwealth	—0.55	—0.76	—1.12	—0.56	—0.31	+0.28	+0.72

* Estimated. † The positive sign indicates a profit, the negative a loss.

30. **Numbers and Descriptions of Rolling-Stock, 1906.**—The following tables give returns of rolling-stock (i.) on Government railways and (ii.) on private railways:—

GOVERNMENT RAILWAYS.—PARTICULARS OF ROLLING-STOCK IN USE ON THE 30TH JUNE, 1907.

State.	Gauge.		Locomotives.		Coaching Stock.		Goods Stock, etc.	
	ft.	in.	Engines.	Tenders.	Cars.	Brake-Vans, etc.	Trucks.	Brake-Vans, etc.
New South Wales ...	4	8½	656	541	764	423	11,379	302
Victoria ...	5	3	*490	...	†1,217	‡494	10,519	...
	2	6	7	...	§16	...	106	...
Queensland ...	3	6	350	...	462	118	7,617	¶
South Australia	5	3	157	99	215	30	2,198	59
	3	6	172	177	107	44	3,846	87
Northern Territory ...	3	6	6	...	7	...	‖137	...
Western Australia ...	3	6	321	...	300	24	6,190	132
Tasmania ...	3	6	71	...	140	40	1,312	54
	2	0	5	...	3	3	67	...
Commonwealth ...	...		2,235	817	3,231	1,176	43,371	634

* Including combined shunting engine and travelling crane. † Including eighteen South Australian joint stock. ‡ Including nine South Australian joint stock. § Includes six cars and brake-vans combined. ‖ Including six departmental vehicles. ¶ Included in coaching stock.

PRIVATE RAILWAYS.—PARTICULARS OF ROLLING-STOCK IN USE ON THE 30TH JUNE, 1906.

State.	Locomotives.	Coaching Stock.	Goods and Live-Stock Vehicles.
New South Wales ...	19	22	583
Queensland*	...	...	...
South Australia ...	2	1	71
Western Australia ...	46	18	1,010
Tasmania†	21	16	323
Commonwealth ...	88	57	1,987

* Returns not available. † To the 31st December, 1905.

31. **Number of Railway Employes, 1901 to 1907.**—The following table shews the number of employés in the Railway Departments of each State from 1901 to 1907:—

GOVERNMENT RAILWAYS.—NO. OF EMPLOYES IN RAILWAY DEPTS., 1901-7.

State.	1901.		1902.		1903.		1904.		1905.		1906.		1907.	
	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.
N.S. Wales*...	1,372	11,747	1,503	13,065	1,525	11,518	1,569	11,526	1,605	11,685	1,650	11,828	1,770	13,411
Victoria ...	1,432	10,524	1,541	9,941	1,496	10,358	1,415	9,868	1,499	11,049	1,515	11,432	1,586	12,492
Queensland	994	4,633	912	4,288	942	4,023	892	4,051	890	4,146	906	4,222	949	4,491
South Aust.†	—	3,855	—	3,866	—	3,666	—	3,567	—	3,519	—	3,520	—	5,531
N. Territory†	—	51	—	68	—	63	—	52	—	54	—	54	—	‡72
West. Aust....	876	5,407	857	5,196	912	5,829	910	5,837	930	5,818	928	5,480	921	4,895
Tasmania ...	178	1,252	178	1,169	179	1,061	181	1,153	178	980	178	1,039	177	1,030
C'wealth ...	4,852	37,469	4,991	38,183	5,054	36,018	4,967	36,054	5,102	37,251	5,177	37,575	5,403	41,922

* Exclusive of gate-keepers with free house only. † Separate returns for salaried and wages staff are not available; the number of salaried staff is included with the wages staff. ‡ Europeans, sixty-six; Chinese and coolies, six.

32. **Accidents.—Numbers of Killed and Injured, 1901 to 1907.**—The subjoined tables give particulars of accidents in the Government railways in each State for the years 1901 to 1907. A classification is given for the year ending the 30th June, 1907.

GOVERNMENT RAILWAYS.—TOTAL NUMBER OF PERSONS KILLED AND INJURED, 1901 TO 1907.

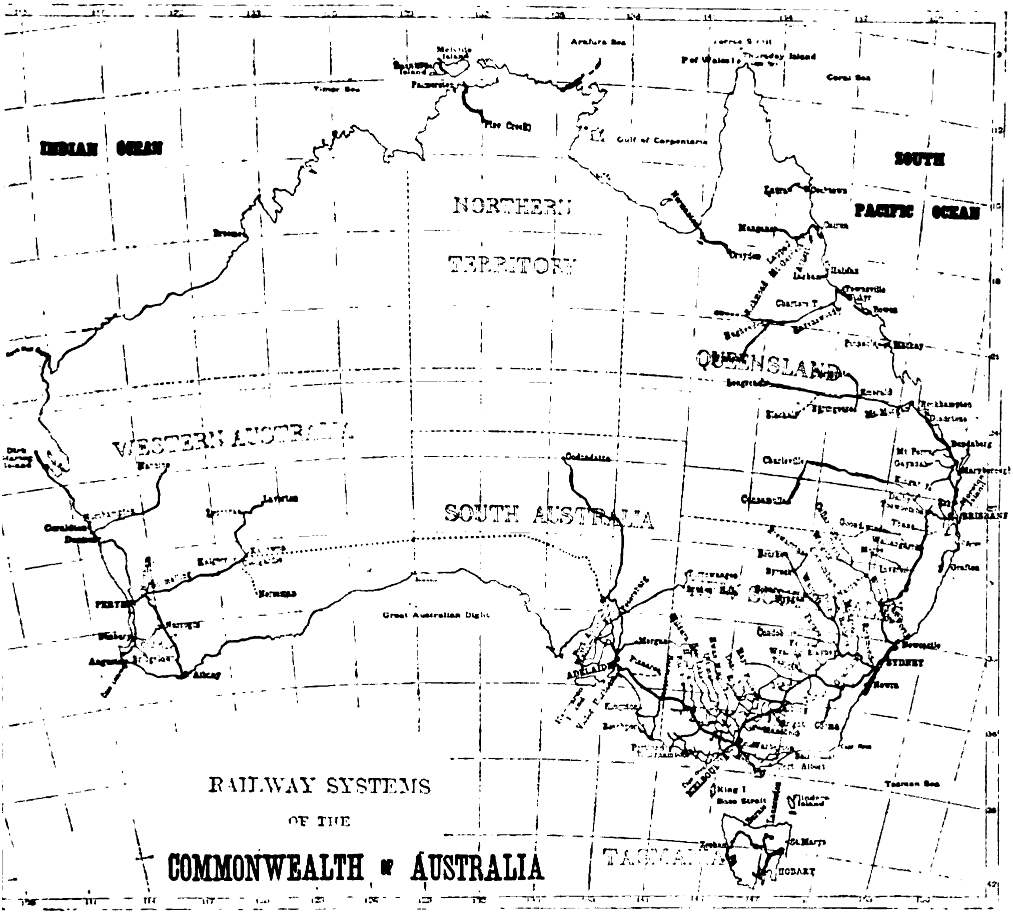
State.	1900-1.		1901-2.		1902-3.		1903-4.		1904-5.		1905-6.		1906-7.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
N.S.Wales ...	46	441	34	822	42	808	44	752	27	667	38	775	30	1,104
Victoria ...	50	615	40	838	40	574	28	682	25	430	60	739	55	527
Queensland ...	20	201	12	180	7	138	14	159	11	157	9	190	12	216
S. Australia...	8	50	12	36	8	35	6	26	9	25	9	64	12	112
N. Territory...	...	...	1	...	...	...	1	...	...	1	1	2	...	2
W. Australia*	5	205	5	218	4	228	2	238	11	405	16	320	11	257
Tasmania ...	1	17	1	24	1	24	3	38	1	51	1	37	1	50
C'wealth ...	130	1,529	105	2,118	102	1,807	98	1,895	84	1,736	134	2,127	121	2,268

* The returns up to and including the year 1904-5 are for accidents to servants of the Railway Department only.

GOVERNMENT RAILWAYS.—PARTICULARS OF PERSONS KILLED AND INJURED DURING YEAR ENDED THE 30TH JUNE, 1907.

State.	Passengers.				Servants of Department.				Trespassers and Others.		Total.	
	Causes beyond their own Control.		Misconduct or want of Caution.		Causes beyond their own Control.		Misconduct or want of Caution.					
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
New South Wales ...	...	32	3	68	1	28	8	868	18	108	30	1,104
Victoria	...	31	6	200	1	123	12	97	36	76	55	527
Queensland	...	2	1	21	1	134	3	46	7	13	12	216
South Australia ...	...	1	4	22	...	31	1	34	7	24	12	112
Northern Territory ...	...	...	...	...	...	...	...	1	...	1	...	2
Western Australia ...	...	22	3	8	2	213	...	2	6	12	11	257
Tasmania	...	...	...	8	...	3	1	39	...	...	1	50
Commonwealth ...	...	88	17	327	5	532	25	1,087	74	234	121	2,268

THE GOVERNMENT RAILWAY SYSTEMS OF AUSTRALIA.



Explanation of Map.—The continuous lines in red denote the existing railway lines of Australia, the heavier lines being the main routes.

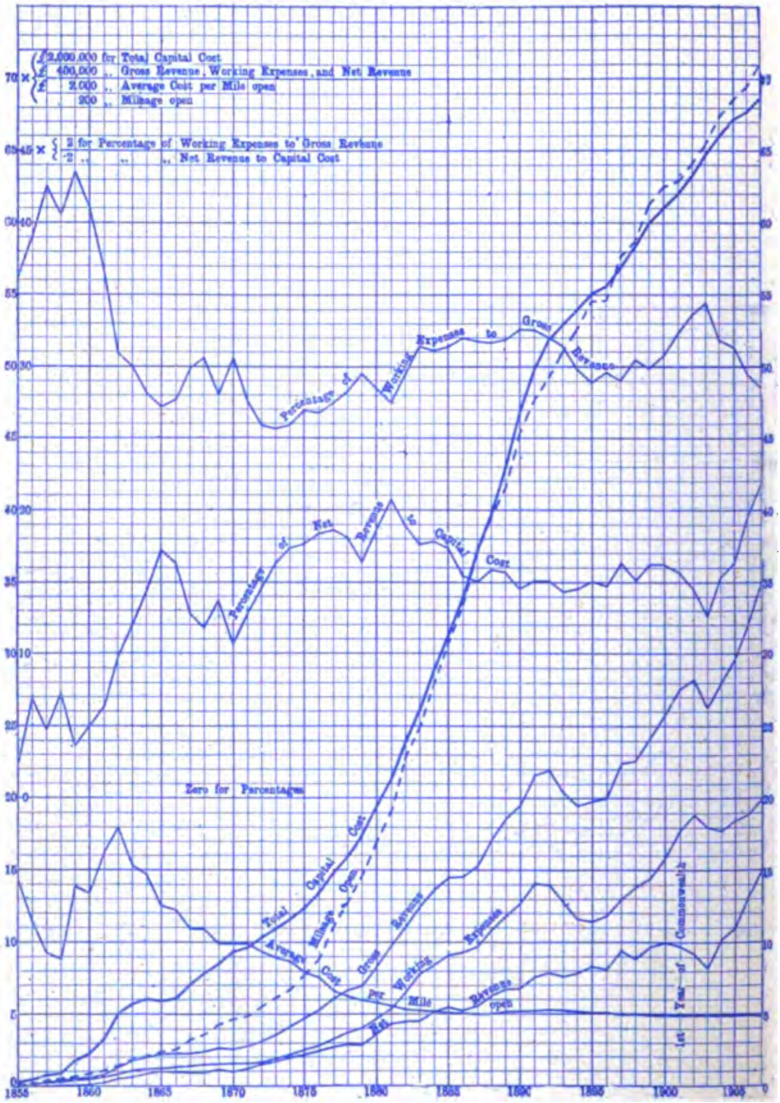
Lines in course of construction are shewn by dotted lines, thus - - - - - -

A proposed transcontinental line, joining the railways of South and Western Australia—and thus connecting continuously by railway Queensland, New South Wales, Victoria, South Australia, and Western Australia—is shewn by dots, thus . . . .

LIST OF PRINCIPAL SECTIONS OF RAILWAYS.

	Miles.		Miles.		Miles.
Townsville to Winton ...	368	Sydney to Hay	460	Adelaide to Broken Hill	334
Rockhampton to Longreach	428	,, Cooma ...	266	,, Oodnadatta	688
Brisbane to Cunnamulla	604	,, Melb'rne, (17 hrs.)	$582\frac{4}{5}$	Perth to Leonora ...	536
Toowoomba to Newcastle	520	Melb'rne to Adelaide, ($17\frac{1}{4}$,,)	$482\frac{3}{4}$	,, Nannine ...	616
Brisbane to Sydney, (28 hrs.)	725	,, Mildura ...	351	,, Albany ...	340
Newcastle to Inverell ...	405	,, Swan Hill ...	215	Hobart to Launceston ...	133
Sydney to Bourke ...	503				

GRAPHS SHEWING THE FINANCIAL POSITION OF THE GOVERNMENT RAILWAYS OF AUSTRALIA, 1855 TO 1907.



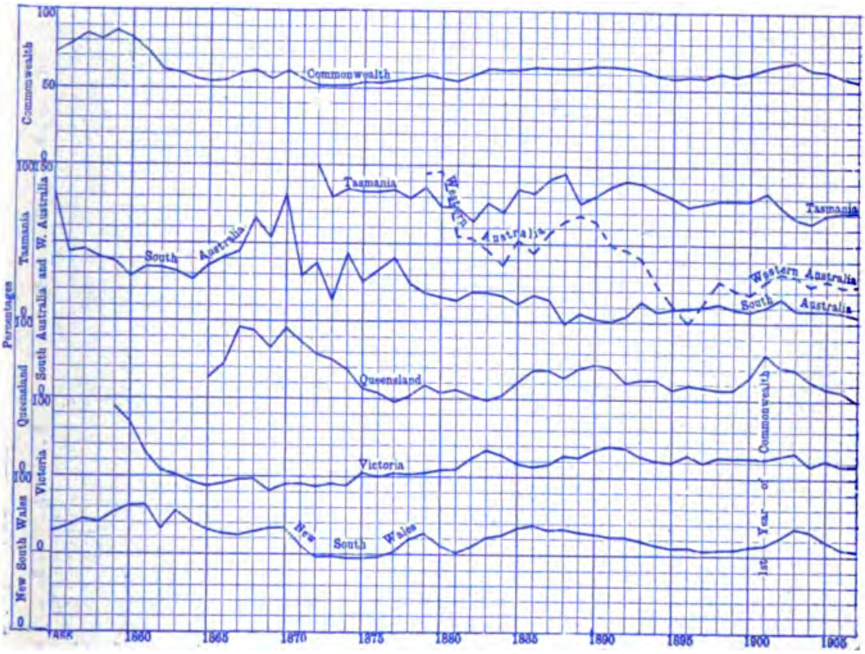
Explanation of Graphs.—In the above diagram the base of each small square represents throughout one year. The significance of the vertical height of each square varies, however, according to the nature of the several curves.

In the heavy curve denoting the total capital cost of the railways of the Commonwealth, each vertical side of each square denotes £2,000,000.

In the three lighter curves, representing (i.) gross revenue, (ii.) working expenses, and (iii.) net revenue, the vertical height of each single square denotes £400,000. For the curve of average cost per mile open, the vertical side of the small square denotes £2000. The mileage open is shewn by dotted curves, the vertical side of each square representing 200 miles.

For the percentages a new zero is taken at "20" on the scale for the general diagram. The vertical height of each square represents 2 per cent. in the curve shewing the percentage of working expenses on gross revenue. For the curve of percentage of net revenue on capital cost, the vertical height of each square represents only 0.2, that is to say, the vertical scale is ten times that of the preceding curve.

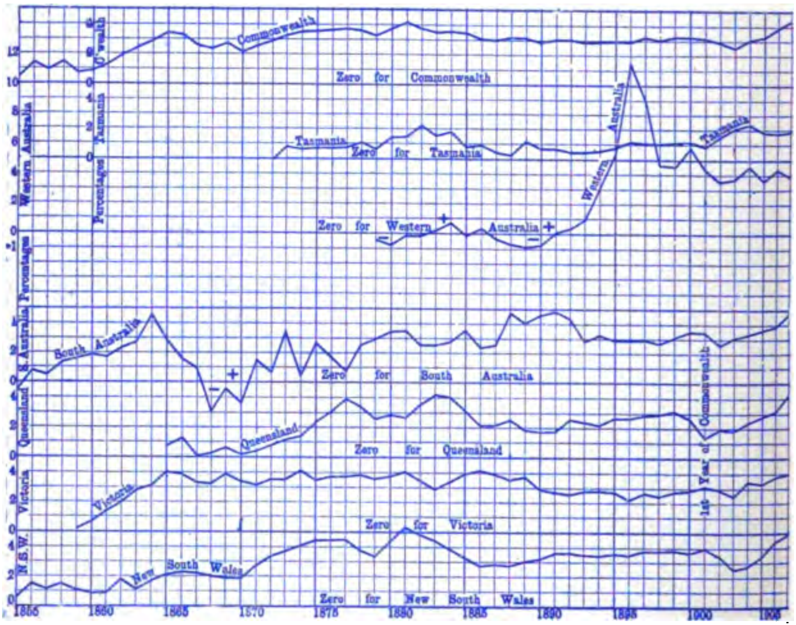
GRAPHS SHEWING PERCENTAGES OF WORKING EXPENSES TO GROSS REVENUE FOR STATES AND COMMONWEALTH, 1855 TO 1907.



EXPLANATION OF GRAPHS.—In the above diagram the base of each small square represents throughout one year. The vertical side of a small square denotes throughout 10 per cent., the heavy zero lines being different for each State and the Commonwealth with, however, one exception, viz., that the zero line for South and Western Australia is identical.

The curve for Victoria commences only in 1859; that for Queensland in 1865; that for Tasmania in 1872; and that for Western Australia in 1879, these being the years in which the Government railway systems of the several States were inaugurated.

GRAPHS SHEWING PERCENTAGES OF NET REVENUE TO CAPITAL COST OF GOVERNMENT RAILWAYS FOR STATES AND COMMONWEALTH, 1855 TO 1907.



EXPLANATION OF GRAPHS.—In the above diagram the base of each small square represents throughout one year. The vertical side of a small square denotes 1 per cent., the thick zero lines, however, for each State and for the Commonwealth being different. This was necessary to avoid confusion of the curves.

Where the curve for any State falls below that State's zero line, loss is indicated, the working expenses having exceeded the gross revenue.

The curve for Victoria commences only in 1859; that for Queensland in 1865; that for Tasmania in 1872; and that for Western Australia in 1879, these being the years in which the Government railway systems of the several States were inaugurated.

§ 3. Graphical Representation of Railway Developments.

1. **General.**—Its railways are so important a factor in the development of Australia that it has been deemed desirable to graphically represent the main facts of their progress from their beginning, viz., from 1855 onwards. To this end the graphs shewn on pages 583 to 586 have been prepared. The distribution of the railways is shewn on the map on page 583.

2. **Capital Cost and Mileage Open** (page 584).—The graph shews that the ratio between these elements was, naturally enough, very variable from 1855 to 1870, consequent upon progressive decrease in cost of construction. It then became subject to a more regular change, implying reduction of average cost.

3. **Cost per Mile Open.**—The fluctuations in cost per mile open are clearly indicated by the graph on page 584. In 1855 the cost per mile open was no less than £28,430; by 1858 it had fallen to £17,752, when it rose again to a maximum of £35,958 in 1862. It then diminished rapidly till 1883—when it reached £10,496 per mile—then slowly till 1887, when it amounted to £10,017 per mile. Again rising, this rate attained to £10,537 in 1892, since which it has, on the whole, been declining, attaining its lowest value, £9669, in 1907.

4. **Gross Revenue.**—This graph (page 584) exhibits considerable irregularities, the most striking of which are the maxima at 1892 and 1902. The fall commencing in 1892 was in consequence partly of the commercial crisis and partly of the then droughty conditions of several of the States, while that of 1902-3 was due to drought. In the latter case the recovery was very rapid.

5. **Working Expenses and Net Revenue.**—The characteristics of these graphs (page 584), are similar to those of "Gross Revenue," and the same remarks apply. It may be noted, however, that the working expenses are increasing at a much slower rate than gross and net revenue.

6. **Percentages of Working Expenses to Gross Revenue.**—This is shewn for each State and for the Commonwealth on page 585, and for the Commonwealth only, on a larger scale, on page 584. The curve shews considerable fluctuations, but points also to the fact that from 1903 to 1907 there has been a rapid, and therefore very satisfactory, decline in the percentage of working expenses to gross revenue. The fluctuations of this percentage, for the individual States, call for no special comment.

7. **Percentage of Net Revenue on Capital Cost.**—For the Commonwealth this graph is shewn on a large scale on page 584 and on page 586 both for Commonwealth and States. After exhibiting somewhat remarkable oscillations in the earlier years, and less marked ones between 1885 and 1900, and also a rapid fall to 1903, the curve from that year shews a well marked increase which seems to have become established, and has lasted from that year up to the present time. Maxima were reached in 1865, 1877 and 1881—viz., 3.44, 3.71 and 4.14 per cent.—but these have been exceeded by the percentage for 1907, that is, 4.35.

For the individual States the results are in general very satisfactory, the increases in the percentages recently being greatest for Queensland, New South Wales, and South Australia, less marked for Victoria and Tasmania, and oscillatory for Western Australia.

The remarkable maximum for Western Australia in 1896 is consequent upon the large use made of the western railways at the time of the development of the Western Australian goldfields.

8. **General Indications of Graphs.**—Reviewing the cost of railways, as a whole, it may be noted that for the periods indicated the average cost on the entire total runs as follows:—

Period	1855-1872.	1873-1882.	1883-1892.	1893-1897.	1898-1902.	1903-1907.
	£	£	£	£	£	£
Cost per mile ...	24,561	13,700	10,286	10,167	9,852	9,781

The percentage of working expenses on the gross revenue is at the present time rapidly falling, while the percentage of net revenue on total capital cost is rising even more rapidly. For the period 1903 to 1907 the fall in percentage of working expenses on gross revenue was from 68.80 to 57.18 per cent., while the rise of the percentage of net revenue on total capital cost was from 2.53 to 4.35 per cent.

While the sinister influence of the drought of 1902 is strikingly shewn in the curves (*a*) by the fall in the gross and net revenue in 1902 and 1903, (*b*) by the fall in the percentage of net revenue on capital cost, and (*c*) by the increase of working expenses on gross revenue, the rapidity of recovery is even more striking, and goes to indicate the great elasticity of the economic condition of the Commonwealth. Still more remarkable is the fact that a group of railways, necessarily constructed largely in accordance with a policy of widespread development of Australia's resources rather than as mere commercial enterprises, and costing so large a sum as £137,196,168 for construction and equipment up to the 30th June, 1907, should, nevertheless, yield so large a revenue, bringing in for the year 1906-7 a return, as pointed out, of no less than 4.35 per cent.

§ 4. Tramways.

1. **General.**—Tramway systems are in operation in all the States of the Commonwealth, and in recent years considerable progress has been made in the adoption of electrical traction, the benefit of which is now enjoyed by a number of the principal towns of the Commonwealth.

(i.) *Total Mileage Open and Classification of Lines.* The following table shews the total mileage of tramway lines open for traffic in each State and in the Commonwealth at the end of the year 1907, classified (*a*) according to the motive power utilised and (*b*) according to the nature of the authority by which the lines are controlled:—

TRAMWAY MILEAGE OPEN—CLASSIFICATION OF LINES, 1907.

Nature of Motive Power or Controlling Authority.	N.S. Wales.	Victoria.	Q'land.	South Australia.	Western Australia.	Tas.	C'wealth.
ACCORDING TO MOTIVE POWER.							
	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
Electric	88⅛	33	30¾	—	54½	9	215⅜
Steam	46⅛	—	166	—	—	2¼	214⅜
Cable	—	45¾	—	—	—	—	45¾
Horse	1¼	13	—	72⅝	23	—	109⅞
Total	135½	91¾	196¾	72⅝	77½	11¼	585⅜
ACCORDING TO CONTROLLING AUTHORITY.							
Government ...	128¾	5⅛	—	17⅜	23	—	174¼
Municipal	—	—	166	49	7¼	—	222¼
Private	6¾	86⅝	30¾	6¼	47¼	11¼	188⅞
Total	135½	91¾	196¾	72⅝	77½	11¼	585⅜

2. **New South Wales.**—In this State the tramways, with but few comparatively unimportant exceptions, are the property of the Government, and are under the control of the Railway Commissioners.

(i.) *Tramway Systems.* In Sydney and suburbs the Government tramways are divided into distinct systems. There were in June, 1907, five such systems in operation within the metropolitan area, the most important being the city and suburban lines—75¼ miles in length—and the North Shore line—11⅞ miles in length. Both of these systems are now operated by electricity. There are two systems on which the motive power used is steam, namely—(*a*) the line from Ashfield to Enfield and Mortlake, seven and a half miles long, and (*b*) the line from Kogarah to Sans Souci, nearly five miles in length, and there is a horse tramway at Manly one and a quarter miles long. There are also Government steam tramways in operation at Newcastle, Broken Hill, and Parramatta.

(*a*) *Sydney Tramways.* The first tramway constructed in Sydney ran from Bridge-street to Hay-street, *via* Hunter-street. It was opened in September, 1879, and the motive power was steam. In the following few years these steam tramways were considerably extended. The electric system was not introduced into the city until the close of the year 1899, though it had at that time been in operation for some years in North Sydney. The tramways in the heart of the city, running along King-street to the suburb of Woollahra, as well as those in North Sydney, were originally worked by underground cables, and have since been converted into electric lines on the overhead trolley system. In December, 1899, the electric tramway, extending from the Circular Quay along George-street to the Redfern Station, and thence to the densely populated district of Pyrmont, was opened for traffic. This tramway is a double track, and is three and a quarter miles in length. Single lines have been constructed along Castlereagh and Pitt streets, with the object of relieving the traffic along George-street. The whole of the steam tramways in Sydney and suburbs, with the exception of the Ashfield-Mortlake and the Kogarah-Sans Souci lines, have now been converted into electric lines, and provision for the extra power required for the electrification of the two last-named lines has been made at the central station.

(*b*) *Other Tramway Systems.* In Newcastle the first section of the tramways, from Perkins-street to Plattsburg, was opened in 1887; the total length open on the 30th June, 1907, was 17⅛ miles. At Broken Hill and Parramatta the first sections of the tramways were opened in 1902. On the 30th June, 1907, the mileage open at Broken Hill amounted to six and a quarter, and at Parramatta to four and a half miles. On the same date the total length of all Government tramways open for traffic was 128¾ miles, the capital cost of construction and equipment of these lines being £3,669,524. There were also five and one-eighth miles of line under construction, of which four and three-quarter miles were at Sydney and the remainder at Broken Hill, while further extensions amounting in all to 11⅛ miles had been authorised. There are also three short lengths of tramways in New South Wales run by private companies. Further particulars are given below.

(ii.) *Particulars of all Government Tramways, 1901-7.* The following table shews the total length, the capital cost, the gross revenue, working expenses, and net earnings, and the percentages of working expenses on gross revenue, and of net earnings on capital cost for each financial year from 1900-1 to 1906-7, inclusive.

The net result for the year 1906-7, after providing for all working expenses and £131,793 interest on the capital invested, was a surplus of £48,961, as compared with £55,960 for the previous year:—

NEW SOUTH WALES.—PARTICULARS OF WORKING OF GOVERNMENT TRAMWAYS, 1901 TO 1907.

Year ended the 30th June.	Total Length of Lines Open.	Capital Expended on Lines Open.	Gross Revenue.	Working Expenses.	Net Earnings.	Percentage of Working Expenses on Gross Revenue.	Percentage of Net Earnings on Capital Cost.
	Miles.	£	£	£	£	per cent.	per cent.
1901 ...	79¼	2,194,493	551,674	462,471	89,203	83.83	4.07
1902 ...	104	2,829,363	631,757	541,984	89,773	85.79	3.19
1903 ...	124½	3,371,587	752,034	654,165	97,869	86.98	2.90
1904 ...	125¾	3,471,759	802,985	673,625	129,360	83.89	3.73
1905 ...	125¾	3,637,922	813,569	685,682	127,887	84.28	3.51
1906 ...	126	3,669,096	851,483	665,083	186,400	78.11	5.08
1907 ...	128¾	3,669,524	908,701	727,947	180,754	80.11	4.92

(iii.) *Particulars of Different Systems of Government Tramways, 1906-7.* In the subjoined statement particulars are given of the working of the electric, steam, and horse tramways in Sydney, and of the other Government tramways at Newcastle, Broken Hill, and Parramatta :—

NEW SOUTH WALES.—PARTICULARS OF THE WORKING OF THE VARIOUS GOVERNMENT TRAMWAYS, 1906 TO 1907.

Particulars.	Sydney.				New-castle. (Steam.)	Broken Hill. (Steam.)	Parra-matta (Steam.)	Total.
	Electric.	Steam.	Horse.	Total.				
Length ... miles	87⅛	12½	1¼	100⅞	17⅛	6¼	4½	128¾
Total cost ... £	3,247,817	72,334	12,451	3,332,602	245,410	61,408	30,104	3,669,524
Gross revenue £	832,202	9,756	656	842,614	47,476	15,689	2,922	908,701
Working expenses £	662,187	11,387	716	674,290	37,420	13,335	2,902	727,947
Interest ... £	116,578	2,624	452	119,654	8,819	2,228	1,092	131,793
Profit or loss* £	+53,437	—4,255	— 512	+ 48,670	+ 1,237	+ 126	—1,072	+ 48,961

* The positive sign indicates a profit, the negative a loss.

The total capital cost shewn in the preceding table was made up as follows :—

Permanent Way	Rolling Stock	Power-house, Sub-stations, and Plant	Machinery	Workshops	Furniture	Total.
£2,062,072	£747,283	£728,943	£40,179	£88,655	£2,392	£3,669,524

The average cost per mile open was £16,026 for permanent way and £28,518 for all charges.

(iv.) *Sydney Electric Tramways.* The total length of the city and suburban lines is 75¼ miles, and of the North Shore line 11⅞ miles, making the total length of the electric tramways in Sydney 87⅛ miles. The current for the operation of these tramways is generated at the power-house at Ultimo, which was erected at a cost of £728,943, including the cost of the sub-stations and plant. The current generated at the power-house is partly continuous and partly alternating, and is used both for lighting and traction purposes. The standard voltage of the continuous current is 600; the alternating current is transmitted by means of high tension cables to sub-stations, where it is converted to continuous current at the standard voltage. The total output of the power-house, for both lighting and traction purposes, during the year 1906-7, was 38,343,573 kilowatt-hours, of which the direct current supply was 14,587,289, and the alternating current 23,756,289 kilowatt-hours. The following table gives particulars of the working of the electric tramways for each financial year from 1901 to 1907, inclusive :—

NEW SOUTH WALES.—PARTICULARS OF SYDNEY ELECTRIC TRAMWAYS, 1901 TO 1907.

Year ended 30th June.	Mileage Open for Traffic (Single).	Total Cost of Construction and Equipment.	Gross Revenue.	Working Expenses.	Net Revenue.
	Miles.	£	£	£	£
1901	44½	1,017,321	258,161	201,149	57,012
1902	52	1,285,014	340,742	257,557	83,185
1903	113	2,610,287	560,693	420,718	139,975
1904	118¾	2,715,748	670,603	515,043	155,560
1905	133¾	3,124,140	705,132	559,565	145,567
1906	139	3,259,936	780,986	569,566	211,420
1907	141½	3,247,817	830,497	629,108	201,389

Year ended 30th June.	Output of Power-house for Traction Purposes.	Tram Miles Run.	Passengers Carried.	Number of Cars in Use.	Number of Persons Employed.
	Kilowatt-hours	No.	No.	No.	No.
1901	10,043,544	3,993,407	49,068,661	337	2,173
1902	15,471,747	6,174,646	63,517,020	436	2,855
1903	25,541,560	11,183,851	100,341,281	629	3,745
1904	30,866,308	14,382,761	116,312,375	626	3,873
1905	30,196,806	14,783,256	122,626,315	682	4,069
1906	32,315,754	15,351,781	135,300,401	735	3,863
1907	33,941,485	15,630,887	144,038,105	727	4,044

(v.) *Private Tramways.* There are three private tramway lines in New South Wales, and they are all within the Sydney metropolitan area. (*a*) There is an electric tramway running from Rockdale to Lady Robinson's Beach, a distance of one mile. This line was originally opened as a steam tramway in 1885, but was subsequently converted into electric. (*b*) A private steam tramway passes through the township of Parramatta. Commencing at the park gates, it runs as far as the Duck River, a distance of three miles, where it connects with the Parramatta River steamers, conveying passengers and goods to and from Sydney. This line was opened for traffic in 1883. (*c*) Another steam tramway runs between Fassifern and Toronto, on Lake Macquarie, a distance of two and three-quarter miles, and was first opened in 1891. Further particulars as to the working of these private tramways are not available.

(vi.) *Sydney Harbour Ferries.* As the ferry services on the waters of Port Jackson are mainly subsidiary to the suburban railway and tramway systems, it has been thought advisable to include them here rather than under shipping. Returns for the year 1906 were received from five companies, and shew that these companies had sixty boats in commission which were licensed to carry a total of 29,991 passengers, or an average of 500 per boat and per trip. The total number of passengers carried during the year is stated as 18,535,276, an average of more than 50,000 per day. In addition to the ordinary passenger traffic there are two lines providing for vehicular traffic, and thus affording the only rapid means of transit between the city and the northern suburbs. The five companies employed during the year a total of 673 persons. Their capital expenditure to the end of 1906 amounted to £240,660, the gross revenue during 1906 to £191,936, and the expenditure to £135,429, thus giving a net revenue of £56,507 The services are well managed, and the boats constructed during recent years—double-ended screwboats—are claimed to be superior in size and equipment to boats employed on similar service in any part of the world.

3. **Victoria.**—In Melbourne there are a number of tramway systems carried on under the control of various authorities, the most important being the cable system worked by the Melbourne Tramway and Omnibus Company. There are also two lines of electric tramways, one running from St. Kilda to Brighton, a distance of five and one-eighth miles, belonging to the Government, and under the control of the Railway Commissioners; the other, from Flemington Bridge to the Saltwater River and Keilor Road, a distance of seven and a quarter miles, is run by a private company. There is also a private cable tramway, two and a quarter miles in length, between Clifton Hill and Preston: and there are two private tramways worked by horses—one, seven miles in length, runs from Sandringham to Beaumaris, the other, one and a half miles long, from Brunswick to Coburg. There are also systems of electric tramways at Ballarat and Bendigo, constructed and run by a private company.

(i.) *Melbourne Cable Tramways.* The Melbourne Omnibus Company began its services by the initiation of the omnibus lines in 1869, and in 1878 the company changed its name to the Melbourne Tramway and Omnibus Company, with a view to the introduction of a tramway system in the city and suburbs of Melbourne. It was not, however, until the year 1883, when the Melbourne Tramway and Omnibus Company's Act was passed, that the necessary authority was given by Parliament for that purpose. Under this Act the company was empowered to construct tramways in the streets of Melbourne and suburbs, with the consent of the municipalities interested, who had the option of electing to construct the tramways themselves. All the municipalities decided to exercise the option conferred upon them, and, according to the provisions of the Act, a Tramways Trust was formed. This body, which is composed of seven members from the Melbourne City Council and one member each from the councils of eleven of the surrounding municipalities, received full power to construct tramways, and to borrow money for that purpose, secured on the municipal properties and revenues and on the tramways themselves. The Trust raised sufficient funds to pay for the construction of the tramway tracks and the engine-houses from which the cables are worked. It was required by the original Act, as amended in 1897 and 1892, to complete the tramways by the end of the year 1893, and to grant a thirty-two years' lease of the tramways to the company, dating from the 1st July, 1884—when the liability for interest on the loans commenced—and expiring on the 1st July, 1916. The company is required to find sufficient capital to build the rolling-stock and to equip the lines and engine-houses with all necessary working requisites. The company pays to the Trust annually the interest due upon the loans raised, and also a sufficient sum as a sinking or redemption fund, to repay by its accumulation the principal of the loans raised by the Trust, and at the expiration of the lease must hand back the lines in good working order to the Trust. The expenses of the Trust were paid out of the loan up to the end of the year 1903, but since that date have been paid by the company to an amount not exceeding £1000 per annum, the municipalities being liable for the remainder. The total amount the Trust was empowered to borrow was £1,650,000, which has been raised in London by means of debentures bearing interest at 4½ per cent. Up to the 1st July, 1907, the sums paid by the company to the Trust, with interest accumulations, amounted to £987,000. The first line—that to Richmond—was opened to traffic in November, 1885, and the work being rapidly pushed on, the others were opened at short intervals, and the whole system was completed in 1891. The complete system consists of forty-three and a half miles of double-track cable lines, using constantly over ninety miles of wire rope, and four and a half miles of double-track horse lines.

(*a*) *Particulars of Working, 1901 to 1907.* The subjoined statement shews the tram mileage, the number of passengers carried, and the revenue and expenditure for each year ended the 30th June, from 1901 to 1907, inclusive:—

MELBOURNE CABLE TRAMWAYS.—PARTICULARS OF WORKING, 1901 TO 1907.

Year ended the 30th June.	Tram Mileage.	Number of Passengers Carried.	Reveuue.			Working Expenses.			
			Traffic Rec'pts.	Other.*	Total.*	Wages.	Repairs & Maintenance.	Other.*	Total.*
	No.	No.	£	£	£	£	£	£	£
1901	8,964,734	47,195,647	465,427	18,025	483,452	123,014	80,006	60,480	262,500
1902	9,226,883	47,261,572	454,683	20,152	474,835	125,596	68,689	75,269	269,554
1903	9,044,282	46,832,910	432,505	30,040	462,545	127,746	60,611	56,569	244,926
1904	8,968,928	49,183,742	444,495	28,781	473,276	124,050	71,612	45 928	241,590
1905	8,932,073	50,297,357	448,740	31,066	479,806	123,803	62,177	48,395	234,375
1906	9,032,523	52,925,654	469,079	59,861	528,940	125,390	59,361	47,395	232,146
1907	9,536,397	59,069,280	507,206	39,274	546,480	140,487	69,736	54,445	264,668

* Including amounts on account of omnibus lines.

(ii.) *Electric Tramways.* There are in Melbourne two electric tramway systems, namely (*a*) the St. Kilda-Brighton line and (*b*) the North Melbourne tramways.

(*a*) *The St. Kilda-Brighton Line.* Under the St. Kilda and Brighton Electric Street Railways Act, 1904, the Board of Land and Works was authorised to construct a tramway from St. Kilda to Brighton. The amount of interest payable on the cost of the land acquired for the tramway was guaranteed by the municipalities of St. Kilda and Brighton for a period of twenty years, and authority was given by the Act to the municipalities to levy either a general or special rate not exceeding one shilling in the pound for the purpose of paying the guarantee. The profit, if any, during the first twenty years is to be set off in reduction of the guarantee. The line was opened for traffic in May, 1906, and the extension to Brighton Beach was opened in the following year. The subjoined statement gives particulars of the working of this line for the financial year ended the 30th June, 1907 .—

Mileage Open.	Car Mileage.	Passengers Carried.	Gross Revenue.	Working Expenses.	*Special Expenditure.	Interest.	Net Loss.
			£	£	£	£	£
5.13	303,777	1,030,242	9,590	7,451	9,941	1,980	9,782

* Replacement of rolling-stock, car-shed, and equipment, destroyed by fire.

(*b*) *The North Melbourne Tramways*, extending through the northern suburbs to the Saltwater River and to Keilor Road, were constructed by a private company, and were opened for traffic towards the end of the year 1906.

(*c*) *The Ballarat and Bendigo Electric Tramways* are under the control of a private company, and run along the main streets and to and from the outlying suburbs of the two towns.

(*d*) *Particulars of Working of all Electric Tramways, 1901 to 1906.* The following table gives particulars of the working of all electric tramways in Victoria for each year from 1901 to 1906, inclusive :—

VICTORIA.—PARTICULARS OF WORKING OF ELECTRIC TRAMWAYS, 1903 TO 1906.

Year.	Current Generated for Traction Purposes at Central Station.	Mileage Open for Traffic.	Total Cost of Construction and Equipment.	Tram Miles Run.	Number of Passengers Carried.	Number of Cars in Use.	Number of Employés.
	Kilowatt-hours	Miles.	£	No.	No.	No.	No.
1903	331,712	10⅛	106,553	326,878	1,214,323	12	55
1904	463,633	10½	115,309	483,027	1,749,225	12	86
1905	703,226	23⅜	191,882	699,729	2,759,868	53	210
1906	1,790,353	33	222,486*	1,793,647	7,037,312	78	379

* Incomplete; the figure given shews the cost of construction and equipment of 25¾ miles only.

4. **Queensland.**—In this State there is a system of electric tramways running through the streets of the city and suburbs of Brisbane and controlled by a private company which has its head office in London. The total length of the Brisbane system was thirty and three-quarter miles at the end of the year 1906. There are also a number of tramways run by local authorities in various parts of the State, and constructed out of loans granted by the central Government. At the end of the year 1906 there were nine of these tramways in operation, the total mileage open for traffic amounting to 166.

(i.) *Brisbane Electric Tramways.* These tramways are run on the overhead trolley system, the voltage of the line current being 550. The following table gives particulars of these tramways for each calendar year from 1901 to 1906, inclusive:—

QUEENSLAND.—BRISBANE ELECTRIC TRAMWAYS, PARTICULARS OF WORKING, 1901 TO 1906.

Year.	Current Generated.	Mileage Open for Traffic.	Tram Miles Run.	Number of Passengers Carried.	Gross Revenue.	Working Expenses.	No. of Cars in Use.	Number of Persons Empl'yed.
	Kilowatt-hrs.	Miles.	No.	No.	£	£	No.	No.
1901 ...	3,192,955	21	2,756,443	16,183,801	111,483	64,710	57	375
1902 ...	3,852,308	24½	3,015,548	18,125,302	125,451	73,473	62	390
1903 ...	3,975,355	27	3,157,574	18,376,000	126,526	77,539	65	400
1904 ...	4,154,797	29	3,243,686	18,452,704	126,647	76,586	66	430
1905 ...	4,561,780	30¾	3,323,823	20,049,978	128,436	78,918	66	485
1906 ...	4,370,004	30¾	3,323,657	22,052,424	141,414	78,493	66	550

(ii.) *Shire Tramways.* Under Part XV. of the Local Authorities Act of 1902 provision is made whereby not less than one-third of the ratepayers in any district may petition the local authority to apply to the Governor for the constitution of a tramway area. The Governor may define the area and may also approve of the plans and specifications of the proposed tramway. The amount which may be advanced by the Government for the construction or purchase of a tramway may not exceed a sum equal to £3000 for every mile of its length. As regards repayment of loans, no sum need be paid during the first three years, but after the expiration of that period the principal and interest must be repaid by half-yearly instalments on the basis provided for by the "Local Works Loans Act, 1880 to 1899." For the purpose of raising the money to pay these instalments the local authority may levy a rate upon all rateable property within the tramway area. The money required for the tramway may be raised by the local authorities by the issue of debentures.

(*a*) *Particulars of Shire Tramways, 1903-6.* The subjoined table gives particulars of shire tramways for each year from 1903 to 1906, inclusive:—

QUEENSLAND.—PARTICULARS OF SHIRE TRAMWAYS, 1903 TO 1906.

Year.	Miles. Open.	Total Cost.	*Receipts.	Expenditure.				
				Works, Repairs, and Maintenances.	Loan Redemptions.	Office, Expenses, and Salaries.	Other.	Total.
	Miles.	£	£	£	£	£	£	£
1903 ...	163	349,691	25,636	...	...	...	...	†32,101
1904 ...	165	377,131	49,683	34,328	13,295	3,315	8,394	59,332
1905 ...	165	369,545	38,092	15,361	14,819	3,121	2,050	35,351
1906 ...	165	369,166	39,267	15,847	19,312	3,532	3,042	41,733

* Exclusive of sums received by way of endowment, loan, or grant. † Incomplete.

(*b*) *Particulars of each Tramway for the Year 1906.* The subjoined statement shews the length, capital cost, receipts, and the various items of expenditure for each tramway for the year 1906:—

QUEENSLAND SHIRE TRAMWAYS.—LENGTH, CAPITAL COST, RECEIPTS AND EXPENDITURE OF EACH TRAMWAY FOR THE YEAR 1906.

Tramway.	Length.	Cost of Construction.	Receipts.	Expenditure.					Assets.	Liabilities.
				On Public Works, Repairs, & Maintenance.	Redemption of Loans.	Office Expenses and Salaries.	Other Expenses.	Total.		
	Mls.	£	£	£	£	£	£	£	£	£
Ayr	44	74,501	7,638	2,268	6,492	336	55	9,151	80,976	76,568
Beaudesert	21	57,977	5,052	961	2,861	957	934	5,713	59,727	56,846
Cairns-Mulgrave* ...	31	95,288	13,645	6,997	4,640	1,463	917	14,017	111,103	94,850
Green Hill*	4	5,800								
Ingham	18	28,693	3,064	41	1,407	—	—	1,448	27,430	25,897
Geraldton	19¼	50,009	2,792	1,799	700	155	222	2,876	52,308	58,146
McGregor's Creek† ...	7¼	11,953	1,636	1,010	600	89	36	1,735	22,243	21,737
Cattle Creek† ...	5¾	9,223								
Mossman	14¾	35,719	5,440	2,771	2,612	532	878	6,793	29,367	35,584
Total	165	369,166	39,267	15,847	19,312	3,532	3,042	41,733	383,154	369,628

* The Cairns-Mulgrave and Green Hill branch tramways are both controlled by the Cairns Shire Council. † McGregor's Creek and Cattle Creek tramways are both controlled by the Douglas Shire Council.

The gauge of the Green Hill, Ingham, Geraldton, and Mossman tramways is 2 ft.; that of the other lines is 3 ft. 6 in.

5. **South Australia.**—Up to the year 1906 there were a number of horse tramways in the principal streets of Adelaide and suburbs run by various private companies. Power to acquire part of these lines, with a view to their electrification, was given to the Adelaide Corporation by the Municipal Tramways Trust Act, 1906. In accordance with the provisions of the Act, a Trust consisting of eight members, of whom two were nominated by the Governor, two elected by the City Corporation, and two each by the Suburban Corporations and the District Councils, was formed in 1907, and a length of forty-nine route miles of horse traction tramways were purchased from the private companies at a cost of £283,357. Within three years from the 31st December, 1906, the Trust is to electrify the main lines at a cost not exceeding on the average £12,000 per mile. At the commencement of the year 1908 there were fifty-four miles of single track in process of electrification. There are also in South Australia seventeen and three-eighths miles of Government horse tramways in country districts, worked in connection with the railway system and under the control of the Railway Commissioner. Further particulars as to these lines are not available.

6. **Western Australia.**—In this State there are a number of horse tramways, amounting in all to a length of twenty-three miles, which are the property of the Government. Of these the most important is the line between Roeburne and Cossack, constructed on a 2 ft. gauge and under the control of the Railway Department. The length of this line is eight and a half miles. The remaining fourteen and a half miles belonging to the Government are made up of twelve short lengths varying from eleven chains to four miles sixteen chains, worked in connection with the jetties at various ports for the purpose of providing the necessary communication between such jetties and the goods sheds or warehouses. Most of these short lines are leased at annual rentals, and they are under the supervision of the Harbour Master. Their maintenance and improvement is in the hands of the Public Works Department. In addition to these Government lines there are electric tramway systems at Perth and Kalgoorlie carried on by private companies, and at Fremantle, under municipal control.

(i.) *Government Tramways.* Particulars as to the working of the Government horse-tramways or as to the rents received therefrom are not generally available. The following statement, however, shews particulars of the working of the Roeburne-Cossack line for the financial year ended the 30th June, 1907 :—

WESTERN AUSTRALIAN GOVERNMENT TRAMWAYS.—PARTICULARS OF THE ROEBURNE-COSSACK LINE, FINANCIAL YEAR 1906-7.

Mileage Open.	Cost of Construction and Equipment.	Gross Earnings.	Working Expenses.	Interest.	Loss.
8½	£24,733	£1,951	£2,049	£982	£1,080

The total loss on the working of this line since its inception to 30th June, 1907, amounted to £20,910.

(ii.) *Electric Tramways.* There are now four towns in Western Australia which enjoy the benefits of electric tramway systems, namely, Perth, Fremantle, Kalgoorlie, and Boulder City.

(*a*) *The Perth Electric Tramways* were opened for traffic by a private company in 1899, and the system has since been extended to many of the outlying suburbs. On the 31st December, 1906, there were 26¾ miles of line open, the total cost of construction and equipment to that date being £447,418, exclusive of amounts paid out of revenue to a sinking fund for the redemption of debenture stock.

(*b*) *The Kalgoorlie and Boulder City Tramways* are also run by a private company, the first line being opened in 1902. In the commencement of 1904 legislative authority was given for the construction of lines in Boulder City and suburbs, and in November, 1904, the last section of the Boulder system was completeted. At the end of the year 1906 the total mileage of the whole system—in Kalgoorlie and Boulder City—amounted to 20½ miles, the total cost of construction and equipment being then £171,461.

(*c*) *The Fremantle Tramways* were opened in November, 1905, under the control of the municipality. On the 30th August, 1906, there were 7½ miles of line open for traffic, the cost of construction and equipment at that date being £67,000.

(*d*) *Particulars of Working of all Electric Tramways, 1901 to 1906.* The subjoined table shews, so far as returns are available, particulars of the working of all electric tramway systems in the State for each year from 1901 to 1906, inclusive:—

WESTERN AUSTRALIA.—PARTICULARS OF ELECTRIC TRAMWAYS, 1901 TO 1906.

Year.	Current Generated.	Mileage Open for Traffic.	Total Cost of Construction and Equipment.	Tram Miles Run.	Number of Passengers Carried.	Gross Revenue.	Working Expenses.	No. of Cars in Use.	No. of Persons Employed.
	Kilowatt-hrs.	Miles.	£	No.	No.	£	£	No.	No.
1901	...	16½	367,037	721,056	...	46,270	26,673	30	...
1902	...	17	380,861	788,120	...	56,157	32,464	30	...
1903	*1,561,804	36¼	†411,154	1,396,888	8,226,926	99,794	68,567	59	‡70
1904	*1,831,385	42	§588,129	1,590,925	9,833,212	118,269	69,586	62	266
‖1905	*2,695,277	54	§683,280	2,190,988	12,861,664	147,455	91,006	89	373
1906	*3,076,810	54½	§685,879	2,325,378	13,595,098	152,678	92,379	89	436

* Exclusive of Kalgoorlie tramways, for which returns are not available. † Exclusive of Kalgoorlie tramways and also of amounts paid out of revenue to sinking fund for redemption of debenture stock of the Perth Tramways Company. ‡ Exclusive of Perth tramways. § Exclusive of amounts paid out of revenue to sinking fund for the redemption of debenture stock of the Perth Tramways Company. ‖ Including returns for the Fremantle tramways for a period of ten months ended the 31st August, 1906, at which date the municipal financial year ends.

7. **Tasmania.**—In Hobart there is a system of electric tramways, amounting in all to a length of nine miles, owned by a private company. There is also a steam tramway at Zeehan, two and a quarter miles in length, owned by a private company and used for the purpose of conveying both goods and passengers. Under the authority of the Launceston Tramway Act of 1906 the Launceston City Council entered into an agreement with a private company for the construction of a system of electric tramways in the city and suburbs of Launceston. The agreement provides that the company is to run the tramways for a period of twenty-five years, when the Council may purchase the lines and stock at cost price; the electric power required is to be supplied by the Council. At the time of going to press the work of construction had not been commenced.

(i.) *Hobart Electric Tramways.* These tramways were opened for traffic in 1893, the total cost of construction and equipment to the 31st December, 1906, being £88,500. The following table gives particulars of the working of this system for each year from 1901 to 1906, inclusive:—

TASMANIA.—PARTICULARS OF WORKING OF HOBART ELECTRIC TRAMWAYS, 1901 TO 1906.

Year.	Current Generated.	Mileage Open for Traffic.	Tram Miles Run.	Number of Passengers Carried.	Gross Revenue.	Working Expenses.	Number of Cars in Use.	Number of Persons Employed.
	Kilowatt-hours	Miles.	No.	No.	£	£	No.	No.
1901 ...	...	9	321,633	1,734,120	16,097	11,735	20	90
1902 ...	...	9	321,533	1,848,104	17,319	11,820	20	90
1903 ...	...	9	332,986	1,962,617	18,326	11,106	21	91
1904 ...	378,857	9	330,451	2,045,629	19,855	10,906	21	94
1905 ...	455,833	9	332,135	2,327,448	20,560	11,260	22	111
1906 ...	460,315	9	341,638	2,199,759	20,261	10,968	23	110

(ii.) *Zeehan Steam Tramways.* This line, two and a quarter miles in length, was opened in 1898:—

TASMANIA.—PARTICULARS OF WORKING OF ZEEHAN STEAM TRAMWAYS, 1901 TO 1906.

Year.	Miles Open.	Cost of Construction and Equipment.	Gross Receipts.	Working Expenses.	Number of Miles Run.	Number of Passengers Carried.	Number of Employés.	Number of Passenger Cars.
	Miles.	£	£	£	No.	No.	No.	No.
1901 ...	2¼	5,388	*	1,848	7,488	9,970	7	2
1902 ...	2¼	5,388	*	*	8,451	7,302	6	2
1903 ...	2¼	5,015	*	*	8,372	6,714	7	4
1904 ...	2¼	5,000	*	*	8,990	10,270	7	4
1905 ...	2¼	5,515	*	*	9,654	†	7	4
1906 ...	2¼	5,515	*	*	10,000	†	7	4

* Returns not available. † There was no regular passenger service in 1905 or 1906, holiday excursions alone being provided for.

SECTION XVIII.

POSTS, TELEGRAPHS, AND TELEPHONES.

§ 1. Posts.

1. **The Commonwealth Postal Department.**—Under the provisions of section 51 of the Commonwealth Constitution Act the Commonwealth Parliament was empowered to make laws with respect to the control of the postal, telegraphic, and telephonic services in Australia, and by proclamation, made under section 69 of the same Act, the six separate State Post and Telegraph Departments were amalgamated and taken over by the Federal Executive on the 1st March, 1901. On the 1st December following, the Commonwealth Post and Telegraph Act 1901 came into operation, and the provisions of the various State Acts referring to the postal and telegraphic services thereby ceased to apply; it was, however, specially provided by the Act of 1901 that all regulations in force and all rates and charges levied under any State Act should continue in force and be applied in the same manner as if such State Act were not affected by the Commonwealth Act. The administration of the Act of 1901 was placed in the hands of a Postmaster-General, a responsible Minister with Cabinet rank, whilst a principal officer in each State was provided for under the style of Deputy Postmaster-General. The rates and charges levied in each State for the transmission of letters, telegrams, and postal articles, at the date of Federation, remained in force until the Post and Telegraph Rates Act came into operation on the 1st November, 1902. This Act secured uniformity throughout the Commonwealth in the rates charged for the conveyance of newspapers by post, and for the transmission of telegrams, but did not make any alteration in the charges made in the individual States for the transmission of letters, cards, parcels, and packets. At the present time there are anomalies in postal rates, to which reference is made hereinafter.

2. **First Post Office in Australia.**—The first Australian office for postal purposes was established in Sydney by Lieutenant-Governor Paterson under a Government order dated the 25th April, 1809, which declared that owing to complaints having been made that numerous frauds had been committed by individuals repairing on board ships on their arrival in port, and personating others, by which they wrongfully obtained possession of letters and parcels, the Lieutenant-Governor had established an office at which all parcels and letters arriving by any vessel, addressed to the inhabitants of the colony, were to be deposited previous to their distribution. The office was in High-street (now known as George-street) at the residence of Mr. Isaac Nicholls, who was empowered "in consideration of the trouble and expense attendant on this duty" to charge on delivery to the addressee the following sums:—For every letter, one shilling; for every parcel not exceeding 20 lbs. weight, two shillings and sixpence; and for all exceeding that weight,

five shillings. A list was to be published in the *Gazette* of the names of persons to whom letters and parcels were directed. Soldiers' letters were charged only one penny. The duties of this office were extended in June, 1810, by Governor Macquarie, who established it as a regular post office, at which all parcels and letters, either colonial or foreign, were to be deposited previous to their distribution. Mr. Nicholls was appointed postmaster, and was authorised to charge on delivery to the addressee eightpence for every English or foreign letter of whatever weight, and for every parcel weighing not more than 20 lbs., one shilling and sixpence, and exceeding that weight, three shillings. The charge on colonial letters was fourpence irrespective of weight, and soldiers' letters, or letters addressed to soldiers' wives, were charged one penny.

3. **Postal Services in Early Days.**—After the establishment of the first post-office in Sydney very little improvement in regard to postal matters took place for a number of years, and it was not until 1825 that an Act was passed by Sir Thomas Brisbane, with the advice of the Council, "to regulate the postage of letters in New South Wales." This enactment provided for the establishment of post offices in Sydney and in other parts of the colony, for the appointment and payment of postmasters, and for the determination of rates for the conveyance of letters in the colony and for the delivery of letters from abroad. A proclamation under this Act was issued, fixing the rates of postage and the salaries and allowances of postmasters, and inviting tenders for the conveyance of mails between Sydney and Parramatta, Windsor and Liverpool; between Liverpool and Campbelltown; from Parramatta to Emu Plains, and thence to Bathurst. It was not, however, until 1828 that the provisions of the Act were put into full force and a system of general post-office communication was established. In that year rates of postage were fixed, depending upon the distance and the difficulty of transmission. The lowest single inland rate was threepence and the highest one shilling, the postage on a letter increasing according to its weight, the minimum fee being charged on letters not exceeding a quarter of an ounce. The fee for newspapers was one penny. Letters from New South Wales to Van Diemen's Land were charged threepence each, while other letters by ship were charged fourpence each single rate, and sixpence for any weight in excess. The Act of 1825 was amended by the Postal Act of 1835, under which the Governor was authorised to establish a General Post Office at Sydney, and to make rules and regulations, and to fix rates for the conveyance of letters and parcels. The charge on a single letter was fixed at fourpence for a distance of fifteen miles, fivepence for twenty miles, sixpence for thirty miles, and so on up to one shilling for 300 miles. For every letter sent by sea from one part of the colony to another the charge was fourpence. Newspapers printed in the colony, if transmitted within seven days from the date of publication, and all newspapers from abroad were conveyed free, while public officers and members of the Executive and Legislative Councils were allowed to frank letters, subject to prescribed regulations. In 1837 a post office was established in Melbourne, and a fortnightly service was established between that city and Sydney. In the same year stamps were introduced in the form of stamped covers or wrappers, which are said to have been the first postage stamps ever used. Post offices were established and a postal service was organised in the other States of the Commonwealth shortly after their settlement, and a tolerably good overland service by horses and mail coaches soon developed between the capitals and the up-country towns, villages, and stations as settlement progressed. In Tasmania the mails were delivered in 1824 by foot post once a fortnight, while in 1835 a mail cart made the journey twice a week from Hobart to Launceston—121 miles—in nineteen hours. In Western Australia the Legislative Council passed an Act establishing a postal department in 1834; a weekly mail between Guildford and York and an overland monthly mail from Perth to King George's Sound were commenced in 1841, and in the following year a regular mail service between all the settled districts of the State was inaugurated. By the year 1838 there were forty post offices in New South Wales, which at that time included the Port Phillip (Victoria) and the Moreton Bay (Queensland) districts, employing altogether

fifty-two persons. The revenue for the year was £8391, and the expenditure £10,357, while a total number of 489,772 letters and 297,245 newspapers were dealt with at the post office in Sydney. In the same year the post office at Port Phillip transmitted 7424 letters and 2795 newspapers, the revenue being £230.

4. **Development of Postal Services.**—The New South Wales Postal Act of 1835, referred to above, was amended in 1838, 1840, and again in 1851, when the postage on town letters, *i.e.*, letters received at any post office for delivery at such post office or at any place within the limits of the township in which such post office was situated, was fixed at one penny; for letters transmitted between separate postal towns the postage was twopence, and for letters received from or to be transmitted by ship to places beyond the limits of the colony the fee was threepence in addition to the inland postage. For parcels the rate was twopence up to four ounces weight, and one halfpenny for every additional ounce. The postage on all letters and packets was to be prepaid, and the Governor of New South Wales was authorised to arrange with the Governor of the newly-established State of Victoria for the mutual exemption from further postage of all letters and packets received in either of the respective States, upon which the established rates of postage in the other said State had been already prepaid. Masters of vessels were obliged, under penalty, to deliver up all mails and postal packets, on demand, to the postmaster at any port, and masters of departing vessels were likewise compelled to take and deliver mails from one port to another, the masters being entitled, in each case, to an allowance of one penny for each letter or packet. It is interesting, at the present time, to notice that the Postal Amendment Act of 1840 contained a clause making it compulsory, under a penalty of from £10 to £50, for the masters of all steamboats or other vessels entering a port "to give timely notice of the near approach thereof, either by the ringing of a bell or by such other signal as may reasonably be expected to be distinctly heard or seen by the postmaster, a sufficient time before the actual arrival of such steamboat or other vessel, to enable him to receive or despatch any mail on board." Regular mail communication was established between Sydney and Adelaide in 1847, and the rate of postage, on a single letter, was fixed at one shilling and sixpence. In the State of Victoria an Act was passed in 1854 providing for the extension of postal facilities and fixing the rates to be charged for the transmission of letters. The postage on town letters was twopence; on letters for transmission between separate postal towns, sixpence; and on letters for transmission beyond the limits of the State, one shilling. Mails were conveyed along the main roads by mail coaches, built after the style of the old-fashioned English coaches; after the discovery of gold, in 1851, coaches built on the model of the Mexican estafeta gradually supplanted the old style. Mails were despatched at night and were delivered with greater rapidity until they were finally sent by railway. The history of the post office in Australia, subsequent to the discovery of gold, has been one of great progress and improvement.

(i.) *Number of Post Offices, Letters and Postcards, and Newspapers, 1841 to 1906.* The number of post offices open in each State and in the Commonwealth at decennial periods since 1841, and at the end of each year from 1901 to 1906, inclusive, is given in the subjoined table, which also shews, for the same years, the total number of letters and postcards dealt with, and the number per 100 of the population, as well as the total number of newspapers dealt with, and the number per 100 of the population in each State and in the Commonwealth. The true total number of letters and postcards and of newspapers dealt with is not obtained by merely adding the figures of the several States together, since interstate letters are counted both in the State from which they are despatched and in that in which they are received for delivery. A second total is therefore given, excluding such interstate excess, obtained by subtracting from the first total for all the States half the sum of the number of interstate letters despatched and received in each of the States:—

DEVELOPMENT OF POSTAL SERVICES, 1841 TO 1906.

Year.	New South Wales.	Victoria.	Queensland.‖	South Australia.	Western Australia.	Tasmania.	Commonwealth.	C'wealth (excluding Interstate Excess).
NUMBER OF POST OFFICES, 31ST DECEMBER, 1841 TO 1906.								
1841 ..	56	3	*	...	...	†43	102	...
1851 ..	101	44	*	72	...	51	268	...
1861 ..	340	369	23	160	14	100	1,006	...
1871 ..	570	706	81	286	39	144	1,826	..
1881 ..	973	1,158	141	488	52	206	3,018	...
1891 ..	1,384	1,729	307	629	86	328	4,463	...
1901 ...	1,684	1,637	411	713	187	376	5,008	...
1902 ...	1,693	1,645	433	702	197	369	5,039	..
1903 ...	1,708	1,646	441	706	218	370	5,089	...
1904 ...	1,726	1,652	450	711	243	371	5,153	...
1905 ...	1,744	1,655	447	711	261	370	5,188	...
1906 ...	1,769	1,659	468	706	281	373	5,256	...
NUMBERS OF LETTERS AND POSTCARDS DEALT WITH IN EACH STATE AND IN THE COMMONWEALTH.								
1841 ...	720,168	56,704	*	...	...	...	...	...
1851 ...	975,318	504,425	*	364,595	...	...	...	...
1861 ...	4,369,463	6,109,929	515,211	1,540,472	193,317	835,873	13,564,265	12,844,800
1871 ...	7,509,500	11,716,166	1,792,644	3,162,774	‡668,957	1,189,994	26,040,035	24,382,300
1881 ...	26,355,600	26,308,347	5,178,547	10,758,005	995,198	2,682,329	72,278,616	67,640,800
1891 ...	64,153,600	§62,526,448	15,345,842	17,836,092	3,192,992	5,852,381	168,907,355	157,297,800
1901 ...	82,783,467	82,598,886	23,269,622	21,395,216	17,450,878	11,173,493	238,671,562	220,177,642
1902 ...	90,781,395	96,485,547	23,444,537	20,955,902	18,151,014	9,379,438	259,197,733	241,795,469
1903 ...	92,238,211	98,810,621	24,244,089	22,153,343	15,786,777	9,911,692	263,144,733	244,945,361
1904 ...	98,270,187	102,515,210	25,256,102	25,050,068	18,588,059	10,752,111	280,431,737	259,167,997
1905 ...	111,960,588	110,455,170	27,309,605	29,094,568	22,106,829	12,615,971	313,542,740	289,584,931
1906 ...	127,683,844	116,459,106	31,462,676	29,357,065	24,829,601	14,552,661	344,344,956	317,118,883
NUMBERS OF LETTERS AND POSTCARDS DEALT WITH PER 100 OF THE POPULATION.								
1841 ...	617	483	*	...	...	...	...	...
1851 ...	495	662	*	548	...	...	...	...
1861 ...	1,237	1,132	1,651	1,228	1,240	929	1,175	1,113
1871 ...	1,478	1,590	1,489	1,712	‡2,668	1,175	1,553	1,454
1881 ...	3,445	3,024	2,286	3,885	3,372	2,304	3,164	2,961
1891 ...	5,616	§5,460	3,870	5,548	6,414	3,929	5,270	4,907
1901 ...	6,033	6,821	4,613	5,840	9,306	6,436	6,237	5,758
1902 ...	6,519	7,964	4,592	5,715	8,508	5,285	6,675	6,226
1903 ...	6,483	8,174	4,729	6,042	7,168	5,554	6,701	6,237
1904 ...	6,793	8,470	4,832	6,686	7,919	5,991	7,038	6,504
1905 ...	7,572	9,064	5,144	7,764	8,834	7,098	7,737	7,146
1906 ...	8,363	9,453	5,879	7,648	9,486	8,078	8,358	7,698
NUMBER OF NEWSPAPERS DEALT WITH.								
1841 ...	1,126,873	120,227	*	...	...	...	...	...
1851 ...	762,307	456,741	*	517,722	...	...	...	...
1861 ...	3,384,245	4,277,179	427,189	1,089,424	137,476	895,656	10,211,469	9,603,000
1871 ...	3,992,100	5,172,970	1,307,305	2,212,620	‡352,008	1,136,338	14,173,941	13,336,200
1881 ...	16,527,900	11,440,732	4,530,263	5,027,332	715,046	2,345,700	41,486,973	38,063,800
1891 ...	42,517,300	§22,729,005	11,896,148	8,888,103	1,665,862	5,376,142	93,067,560	85,280,200
1901 ...	52,317,650	26,297,430	12,804,964	9,572,723	7,975,208	7,440,146	116,408,121	102,727,383
1902 ...	47,763,350	27,874,414	13,127,606	6,299,092	9,916,544	6,959,902	111,940,908	98,568,172
1903 ...	37,900,840	31,364,421	13,510,626	6,124,802	8,125,096	7,183,783	104,209,508	92,844,014
1904 ...	40,384,812	32,141,611	14,516,936	6,952,851	8,578,410	7,256,913	109,831,533	93,269,655
1905 ...	44,599,104	29,563,169	16,337,562	7,737,218	10,054,085	9,179,172	117,470,260	97,789,906
1906 ...	47,144,094	29,610,839	17,612,881	8,744,619	9,941,153	10,194,856	123,248,442	103,838,931
NUMBER OF NEWSPAPERS DEALT WITH PER 100 OF THE POPULATION.								
1841 ...	965	1,024	*	...	...	...	...	...
1851 ...	386	590	*	778	...	...	...	...
1861 ...	958	792	1,370	868	882	995	885	832
1871 ...	786	702	1,086	1,198	‡1,407	1,122	845	795
1881 ...	2,140	1,315	2,000	2,140	2,423	2,015	1,816	1,666
1891 ...	3,722	§1,985	3,000	2,763	3,346	3,609	2,904	2,661
1901 ...	3,813	2,172	2,538	2,617	4,253	4,285	3,042	2,685
1902 ...	3,430	2,301	2,569	1,718	4,649	3,922	2,882	2,538
1903 ...	2,664	2,594	2,635	1,661	3,580	4,035	2,653	2,364
1904 ...	2,792	2,655	2,772	1,865	3,655	4,036	2,756	2,341
1905 ...	3,016	2,426	3,078	2,045	4,018	5,121	2,899	2,413
1906 ...	3,087	2,402	3,291	2,278	3,797	5,658	2,992	2,520

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* Included in New South Wales. † In 1844. ‡ In 1872. § In 1890. ‖ The figures up to and including the year 1903 are partially estimated.

(ii.) *Number of Parcels and Packets dealt with, 1901 to 1906.* The following table shews the total number of parcels and packets dealt with in each State and in the Commonwealth during each year from 1901 to 1906, inclusive :—

NUMBER OF PARCELS AND PACKETS DEALT WITH, 1901 TO 1906.

State.	1901.	1902.	1903.	1904.	1905.	1906.
PARCELS.						
New South Wales	736,496	785,528	834,329	924,920	994,144	1,162,185
Victoria ...	310,674	366,028	429,295	424,924	469,496	510,822
Queensland ...	309,053	303,497	314,312	358,280	389,266	464,370
South Australia ...	77,341	86,086	112,330	132,390	146,064	167,081
Western Australia	35,823	36,368	77,069	87,996	119,705	157,801
Tasmania ...	40,400	47,087	57,947	64,274	69,212	76,537
Commonwealth...	1,509,787	1,624,594	1,825,282	1,992,784	2,187,887	2,538,796
C'wlth (excluding interstate excess)*	1,369,069	1,468,616	1,651,140	1,790,883	1,958,815	2,283,998
PACKETS.						
New South Wales	14,479,891	16,209,912	15,471,092	18,560,464	22,082,950	24,038,946
Victoria ...	14,235,342	12,179,520	12,545,132	14,388,832	14,964,652	16,266,829
Queensland ...	7,333,094	7,453,165	8,126,787	8,430,488	10,121,206	10,231,159
South Australia ...	1,627,616	1,768,981	2,206,887	1,977,994	2,208,646	2,972,699
Western Australia	4,387,025	5,127,666	3,841,787	3,663,977	4,626,251	4,321,116
Tasmania ...	2,238,632	2,599,446	2,961,620	2,901,154	3,029,205	3,528,373
Commonwealth...	44,301,600	45,338,690	45,153,305	49,922,909	57,032,910	61,359,122
C'wlth (excluding interstate excess)*	40,161,527	41,012,586	40,221,250	44,359,571	51,174,904	54,633,499

* In the figures given in this line allowance is made for the fact that in the aggregate obtained by adding together the results for the several States, interstate mail matter is included twice, being counted both in the despatching and in the receiving State. As to the method in which this allowance is computed, see page 600.

5. **Postal Matter Dealt with, 1901 to 1906.**—In the preceding tables is shewn only the *total number* of letters and postcards, newspapers, parcels and packets dealt with—*i.e.*, despatched and received—by the Postal Department in each State, regardless of the place from which they are despatched or of the place at which they are received for delivery. In the following tables the total numbers of letters and postcards, newspapers, parcels, and packets dealt with are divided into (i.) those posted in each State for delivery within the Commonwealth, (ii.) those received in each State from places outside the Commonwealth, and (iii.) those despatched from each State to places outside the Commonwealth.

(i.) *Matter Posted in each State for Delivery within the Commonwealth, 1901 to 1906.* The matter dealt with under this heading is classified in the two following tables, shewing (*a*) matter posted in each State for delivery within that State, and (*b*) matter posted in each State for delivery in other States of the Commonwealth, while the third table (*c*) shews the total matter posted in each State for delivery within the Commonwealth, *i.e.*, it shews the sums of the corresponding figures in tables (*a*) and (*b*).

(*a*) *Matter Posted in each State for Delivery within that State, 1901 to 1906.* The following table shews the number of letters and postcards, newspapers, parcels and packets posted in each State for delivery within that State during each year from 1901 to 1906, inclusive:—

NUMBERS OF LETTERS AND POSTCARDS, NEWSPAPERS, PARCELS, AND PACKETS POSTED IN EACH STATE FOR DELIVERY WITHIN THAT STATE, 1901 TO 1906.

State.	1901.	1902.	1903.	1904.	1905.	1906.
			LETTERS AND POSTCARDS.			
N.S.W. ...	67,925,984	75,852,084	77,314,607	80,231,842	90,671,978	102,789,751
Victoria ...	70,255,396	83,748,327	84,871,415	86,802,756	92,340,704	95,757,186
Queensland	17,390,188	17,614,393	17,791,989	19,231,270	20,795,383	23,590,479
South Aust.	16,910,586	16,659,018	17,722,642	19,688,314	23,334,640	22,577,579
West. Aust.	12,327,468	13,005,204	10,345,152	10,479,402	12,868,528	16,537,261
Tasmania ...	6,247,259	6,099,517	6,384,168	6,460,382	7,374,950	8,431,533
C'wealth ...	191,056,881	212,978,543	214,429,973	222,893,966	247,386,183	269,683,789
			NEWSPAPERS.			
N.S.W. ...	41,571,970	37,775,680	27,725,960	28,284,096	30,303,360	30,832,896
Victoria ...	14,000,095	14,901,804	18,064,141	17,800,589	12,948,945	12,634,907
Queensland	8,764,496	8,717,366	8,683,904	9,460,181	10,505,320	11,460,017
South Aust.	6,682,943	3,663,861	3,529,580	3,987,094	4,727,698	5,563,811
West. Aust.	2,891,166	4,621,341	2,808,552	2,680,425	3,017,218	4,336,732
Tasmania ...	4,797,476	4,427,758	4,659,597	4,411,549	6,310,208	6,767,566
C'wealth ...	78,708,146	74,107,810	65,471,734	66,623,934	67,812,749	71,595,929
			PARCELS.			
N.S.W. ...	591,656	631,261	667,041	739,666	788,183	926,638
Victoria ...	206,409	239,016	281,985	262,216	291,271	312,084
Queensland	251,085	242,328	255,160	279,514	302,886	376,045
South Aust.	45,015	49,505	71,975	86,787	96,581	110,478
West. Aust.	...	...	34,523	38,864	68,920	100,632
Tasmania ...	18,535	20,947	29,029	32,926	33,760	37,162
C'wealth ...	1,112,700	1,183,057	1,339,713	1,439,973	1,581,601	1,863,039
			PACKETS.			
N.S.W. ...	11,461,597	13,129,324	12,245,488	13,770,518	16,767,982	18,270,237
Victoria ...	10,128,622	7,683,184	8,015,331	9,039,944	9,524,237	10,459,968
Queensland	5,222,546	5,431,727	5,620,802	6,352,844	8,005,610	7,780,438
South Aust.	605,189	645,361	937,359	727,230	868,365	911,487
West. Aust.	3,007,408	3,684,376	2,396,291	1,761,005	2,337,346	2,545,787
Tasmania ...	1,401,836	1,559,806	1,789,891	1,912,863	2,107,201	2,412,387
C'wealth ...	31,827,198	32,133,778	31,005,162	33,564,404	39,610,741	42,380,304

(*b*) *Matter Posted in each State for Delivery in other States, 1901 to 1906.* The following table shews the number of letters and postcards, newspapers, parcels, and packets posted in each State for delivery in a State other than that in which it was posted:—

NUMBERS OF LETTERS AND POSTCARDS, NEWSPAPERS, PARCELS, AND PACKETS POSTED IN EACH STATE FOR DELIVERY IN OTHER STATES, 1901 TO 1906:—

State.	1901.	1902.	1903.	1904.	1905.	1906.
LETTERS AND POSTCARDS.						
New South Wales	5,671,853	5,129,527	5,029,303	6,236,232	7,458,758	8,896,101
Victoria ...	4,268,461	4,840,160	4,529,610	5,012,658	5,906,712	6,789,347
Queensland ...	2,450,980	2,444,813	2,749,391	2,014,923	2,242,225	2,712,888
South Australia ...	1,864,523	1,761,306	1,856,096	2,130,061	2,343,933	2,829,127
Western Australia	1,680,748	1,655,288	1,851,319	2,607,306	2,918,067	2,680,078
Tasmania ...	2,536,300	1,774,752	1,727,921	2,273,810	2,510,983	2,842,007
Commonwealth	18,472,865	17,575,846	17,743,640	20,274,990	23,380,678	26,749,548
NEWSPAPERS.						
New South Wales	4,226,410	3,472,890	3,648,260	4,646,004	5,558,772	7,249,098
Victoria ...	6,730,697	7,182,888	6,457,244	7,591,956	9,224,864	9,572,498
Queensland ...	868,529	885,997	1,019,072	726,250	850,462	818,634
South Australia ...	757,189	749,816	783,907	935,598	1,149,897	1,106,037
Western Australia	787,952	796,849	797,919	1,135,465	1,277,897	881,921
Tasmania ...	304,254	321,704	324,624	351,882	330,750	365,117
Commonwealth	13,675,031	13,360,144	13,031,026	15,387,155	18,392,642	19,993,305
PARCELS.						
New South Wales	58,928	58,797	64,376	71,398	83,057	97,926
Victoria ...	49,988	62,443	72,975	83,182	93,756	104,827
Queensland ...	12,633	13,400	14,046	17,701	18,096	20,896
South Australia ...	10,617	11,592	11,882	14,056	15,175	16,884
Western Australia	5,893	5,861	8,359	9,237	9,760	10,715
Tasmania ...	2,559	4,170	4,054	4,953	5,684	6,275
Commonwealth	140,118	156,263	175,692	200,527	225,528	257,523
PACKETS.						
New South Wales	1,292,172	1,178,251	1,202,019	2,259,228	2,713,553	3,400,754
Victoria ...	1,700,851	1,714,684	1,596,890	1,865,814	1,786,938	1,893,565
Queensland ...	816,927	822,901	995,663	343,958	353,812	550,092
South Australia ...	198,702	350,734	230,812	233,855	220,239	277,296
Western Australia	461,035	483,240	484,242	473,602	619,091	366,577
Tasmania ...	98,580	99,681	143,739	156,142	161,353	226,581
Commonwealth	4,568,267	4,649,491	4,653,365	5,332,099	5,854,986	6,714,865

(*c*) ***Matter Posted in each State for Delivery within the Commonwealth, 1901 to 1906.*** The subjoined table shews the number of letters and postcards, newspapers, parcels, and packets posted in each State for delivery within the Commonwealth during each year from 1901 to 1906, inclusive, *i.e.*, the figures in the subjoined table shew the sum of the corresponding figures for each State and during each year in the two last preceding tables:—

NUMBERS OF LETTERS AND POSTCARDS, NEWSPAPERS, PARCELS, AND PACKETS POSTED IN EACH STATE FOR DELIVERY WITHIN THE COMMONWEALTH, 1901 TO 1906.

State.	1901.	1902.	1903.	1904.	1905.	1906.
LETTERS AND POSTCARDS.						
N.S.W. ...	73,597,837	80,981,611	82,343,910	86,468,074	98,130,736	111,685,852
Victoria ...	74,523,857	88,588,487	89,401,025	91,815,414	98,247,416	102,546,533
Queensland	19,841,168	20,059,206	20,541,380	21,246,193	23,037,608	26,303,367
South Aust.	18,775,109	18,420,324	19,578,738	21,818,375	25,678,573	25,406,706
West. Aust.	14,008,216	14,660,492	12,196,471	13,086,708	15,786,595	19,217,339
Tasmania...	8,783,559	7,844,269	8,112,089	8,734,192	9,885,933	11,273,540
C'wealth ...	209,529,746	230,554,389	232,173,613	243,168,956	270,766,861	296,433,337
NEWSPAPERS.						
N.S.W. ...	45,798,380	41,248,570	31,374,220	32,930,100	35,862,132	38,081,994
Victoria ...	20,730,792	22,084,692	24,521,385	25,392,545	22,173,809	22,207,405
Queensland	9,633,025	9,553,363	9,702,976	10,186,431	11,355,782	12,278,651
South Aust.	7,440,132	4,413,677	4,313,487	4,922,692	5,877,595	6,669,848
West Aust.	3,679,118	5,418,190	3,606,471	3,815,890	4,295,115	5,218,653
Tasmania...	5,101,730	4,749,462	4,984,221	4,763,431	6,640,958	7,132,683
C'wealth ...	92,383,177	87,467,954	78,502,760	82,011,089	86,205,391	91,589,234
PARCELS.						
N.S.W. ...	650,584	690,058	731,417	811,064	871,240	1,024,564
Victoria ...	256,397	301,459	354,960	345,398	385,027	416,911
Queensland	263,718	255,728	269,206	297,215	320,982	396,941
South Aust.	55,632	61,097	83,857	100,843	111,756	127,362
West. Aust.	5,393	5,861	42,882	48,101	78,680	111,347
Tasmania...	21,094	25,117	33,083	37,879	39,444	43,437
C'wealth ...	1,252,818	1,339,320	1,515,405	1,640,500	1,807,129	2,120,562
PACKETS.						
N.S.W. ...	12,753,769	14,307,575	13,447,507	16,029,746	19,481,535	21,670,991
Victoria ...	11,829,473	9,397,868	9,612,221	10,905,758	11,311,175	12,353,533
Queensland	6,039,473	6,254,628	6,616,465	6,696,802	8,359,422	8,330,530
South Aust,	803,891	996,095	1,168,171	960,585	1,088,604	1,188,783
West. Aust.	3,468,443	4,167,616	2,880,533	2,234,607	2,956,437	2,912,364
Tasmania...	1,500,416	1,659,487	1,933,630	2,069,005	2,268,554	2,638,968
C'wealth ...	36,395,465	36,783,269	35,658,527	38,896,503	45,465,727	49,095,169

(ii.) *Postal Matter Received in each State from Places Outside the Commonwealth, 1901 to 1906.* The following table shews the number of letters and postcards, newspapers, parcels, and packets received for delivery in each State from places outside the Commonwealth:—

NUMBERS OF LETTERS AND POSTCARDS, NEWSPAPERS, PARCELS, AND PACKETS RECEIVED IN EACH STATE FROM PLACES OUTSIDE THE COMMONWEALTH, 1901 TO 1906.

State.	1901.	1902.	1903.	1904.	1905.	1906.
			LETTERS AND POSTCARDS.			
N.S.W. ...	2,150,357	2,551,893	2,552,105	2,961,837	4,017,563	3,851,371
Victoria ...	1,416,894	1,757,202	1,707,639	2,205,662	2,635,050	2,910,239
Queensland ...	851,905	890,316	893,388	862,284	872,485	983,917
South Aust. ...	348,322	288,522	312,538	435,807	460,628	541,241
West. Aust. ...	586,819	602,167	603,141	1,198,054	1,291,444	1,114,017
Tasmania ...	327,498	252,282	223,085	199,158	411,911	414,059
Commonwealth	5,681,795	6,342,382	6,291,896	7,862,802	9,689,081	9,814,844
			NEWSPAPERS.			
N.S.W. ...	1,509,000	1,433,930	1,615,640	1,714,866	2,163,186	2,431,542
Victoria ...	2,150,232	2,534,410	2,262,854	2,435,640	2,760,220	2,607,580
Queensland ...	1,489,572	1,467,079	1,421,911	1,403,062	1,229,985	1,209,828
South Aust. ...	654,799	514,328	453,974	563,455	515,949	488,578
West. Aust. ...	1,036,275	1,054,761	1,055,771	1,021,557	1,176,276	816,763
Tasmania ...	443,382	337,812	305,240	356,207	349,872	418,904
Commonwealth	7,283,260	7,342,320	7,115,390	7,494,787	8,195,488	7,973,195
			PARCELS.			
N.S.W. ...	30,415	30,168	30,816	34,011	33,369	38,285
Victoria ...	20,345	23,502	26,702	26,449	26,503	28,847
Queensland ...	9,440	9,990	10,192	14,300	10,387	11,889
South Aust. ...	7,418	8,008	8,080	8,420	8,379	9,693
West. Aust. ...	8,568	9,250	9,971	11,431	10,211	12,397
Tasmania ...	4,438	4,778	4,636	3,922	4,881	5,143
Commonwealth	80,624	85,696	90,397	98,533	93,730	106,254
			PACKETS.			
N.S.W. ...	516,017	476,865	532,423	714,054	695,443	[*]107,403
Victoria ...	1,075,116	1,267,205	1,131,427	1,217,820	1,380,109	1,303,790
Queensland ...	622,182	613,683	553,225	452,614	633,305	443,586
South Aust. ...	327,399	257,164	226,986	281,727	257,974	244,289
West. Aust. ...	191,533	196,893	196,919	431,600	439,525	430,499
Tasmania ...	143,502	369,444	179,987	160,180	129,511	158,651
Commonwealth	2,875,749	3,181,254	2,820,967	3,257,995	3,535,867	2,688,218

[*] This figure is determined on a basis different from that adopted in previous years.

(iii.) *Matter Posted in each State for Delivery Outside the Commonwealth, 1901 to 1906.* The following is a similar table and shews the matter posted in each State for delivery outside the Commonwealth :—

NUMBERS OF LETTERS AND POSTCARDS, NEWSPAPERS, PARCELS, AND PACKETS POSTED IN EACH STATE FOR DELIVERY OUTSIDE THE COMMONWEALTH, 1901 TO 1906.

State.	1901.	1902.	1903.	1904.	1905.	1906.
			LETTERS AND POSTCARDS.			
New South Wales	1,639,610	2,145,760	2,292,600	2,960,424	3,297,050	4,073,309
Victoria ...	1,335,572	1,235,388	1,890,706	2,217,936	2,602,122	3,100,550
Queensland ...	550,491	562,193	549,904	575,005	621,601	670,330
South Australia ...	340,029	341,400	337,461	374,228	520,298	727,188
Western Australia	460,954	492,671	493,981	590,897	674,100	757,367
Tasmania ...	618,390	294,867	459,469	429,000	836,686	1,065,433
Commonwealth ...	4,945,046	5,072,279	6,024,121	7,147,490	8,551,857	10,394,177
			NEWSPAPERS.			
New South Wales	801,430	1,438,170	1,494,260	1,735,428	1,857,396	1,912,890
Victoria ...	1,344,365	1,115,640	2,147,958	2,091,810	2,096,196	2,063,868
Queensland ...	353,162	313,286	314,706	304,907	300,874	311,984
South Australia ...	162,422	141,766	147,093	148,431	127,508	167,179
Western Australia	210,988	248,614	247,998	252,788	254,566	207,531
Tasmania ...	182,868	182,022	96,786	115,439	153,438	196,842
Commonwealth ...	3,055,235	3,439.498	4,448,801	4,648,803	4,789,978	4,860,294
			PARCELS.			
New South Wales	13,628	21,171	22,405	22,921	25,795	28,033
Victoria ...	11,268	11,668	12,945	15,051	15,571	17,400
Queensland ...	3,969	3,209	4,011	3,404	3,978	3,994
South Australia ...	3,589	3,944	4,007	4,367	4,512	5,080
Western Australia	1,676	2,734	2,110	3,125	3,232	3,833
Tasmania ...	897	1,159	1,410	1,607	1,323	1,566
Commonwealth ...	35,027	43,885	46,888	50,475	54,411	59,906
			PACKETS.			
New South Wales	409,231	535,125	568,066	689,424	813,530	1,003,317
Victoria ...	590,051	542,448	642,974	915,210	919,218	837,204
Queensland ...	85,978	76,442	82,009	82,273	80,215	73,941
South Australia ...	56,668	80,136	47,000	50,904	71,983	747,116
Western Australia	86,779	87,841	88,015	194,925	235,066	129,035
Tasmania ...	89,802	49,458	34,993	41,098	50,278	48,743
Commonwealth ...	1,318,509	1,371,450	1,463,057	1,973,834	2,170,290	2,839,356

6. **Postal Facilities, 1906.**—The subjoined statement shews the area in square miles and the number of inhabitants to each post office (including receiving offices) in each State and in the Commonwealth at the end of the year 1906. It will be observed that the most sparsely populated States have the greatest number of offices in comparison with their population, but in order to judge the relative extension of postal facilities the area of country to each office must also be taken into account:—

SQUARE MILES OF TERRITORY AND NUMBER OF INHABITANTS TO EACH POST AND RECEIVING OFFICE, 1906.

State	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	C'wlth.
Number of square miles of territory to each post office in State	135	38	495	1,267	2,887	67	402
Number of inhabitants to each office ...	667	532	395	538	774	459	556
Number of inhabitants per square mile	4.92	14.0	0.80	0.42	0.27	6.87	1.38

7. **Rates of Postage.**—The charges made for the postage of newspapers and parcels, and of interstate and foreign letters, are the same in all the States of the Commonwealth. The rates for the transmission of inland letters, however, are not uniform, the Post and Telegraph Act 1901 having specially provided that the rates and charges levied in any State should continue in force.

(i.) *Letters.* The inland letter postage is at the rate of one penny per half-ounce on town and twopence per half-ounce on country letters throughout the Commonwealth, except in the States of Victoria and South Australia. In Victoria the charge made is one penny per half-ounce, and in South Australia, twopence per half-ounce, on all letters posted for delivery within the State. In Victoria the minimum charge was altered in 1890 from twopence per ounce to one penny per half-ounce, but the diminution in revenue at that time was so great that in 1892 the rate was again raised to twopence per ounce; on the 1st April, 1901, it was once more reduced to one penny per half-ounce under the provisions of an Act passed in December, 1900. In New South Wales the town rate of one penny per half-ounce, which is in force in the metropolitan suburban district, is also in operation within a twelve-mile radius of Newcastle, and a thirteen-mile radius of the majority of the other principal country towns. In Queensland the town rate extends to all places within a radius of eleven miles from the General Post Office at Brisbane, and also includes all letters to be delivered from the same office at which they were posted. In Western Australia the town rate has effect within a radius of thirteen miles from the General Post Office at Perth, and in other towns and suburbs within a radius depending upon their population. The postage to the United Kingdom was reduced in January, 1891, from sixpence per half-ounce *via* the Red Sea, and fourpence *via* the Cape of Good Hope, to the uniform rate of twopence halfpenny. In 1891 the States were represented at the Congress of the Universal Postal Union held in Vienna, and on the 4th July a convention was signed on their behalf, by which they joined the Union from the 1st October of that year. On that date the rate of postage to all British possessions and to foreign countries included in the Union was reduced to twopence halfpenny. The charge for postage of interstate letters and of letters to the United Kingdom and to British Possessions is now uniformly twopence per half-ounce throughout the Commonwealth; the rate on letters to foreign countries and to other places is twopence halfpenny for each half-ounce.

(ii.) *Newspapers.* The different rates charged for the carriage of newspapers in the various States, prior to Federation, continued after the control of the Postal Departments had been taken over by the Commonwealth, until the 1st November, 1902, when a uniform rate was imposed by the Post and Telegraph Rates Act 1902. On all newspapers posted for delivery within the Commonwealth (without condition as to the number contained in each addressed wrapper posted) by registered newspaper proprietors, or by newsvendors, or returned by newsvendor or agent to the publishing office, a charge of one penny per twenty ounces on the aggregate weight is imposed. On all other registered newspapers posted within the Commonwealth for delivery therein the charge is a halfpenny per ten ounces for each newspaper. At the end of the year 1906 there were in all 962 publications registered in the Commonwealth under section 29 of the Post and Telegraph Act 1901 for transmission by post as newspapers. The charge on postage of registered newspapers for transmission to the United Kingdom and to other parts of the world is one penny up to four ounces, and a halfpenny for every additional two ounces. Newspapers which are not registered are charged at the same rates as parcels or packets.

(iii.) *Parcels.* Parcels may not exceed 11 lbs. in weight, 3 ft. 6 in. in length, or 6 ft. in length and girth combined. The rate for the inland postage of parcels is sixpence up to 1 lb., and then threepence for every additional pound. For interstate transmission the rate is eightpence up to 1 lb. and then sixpence per lb., and for transmission to the United Kingdom the rate is one shilling up to 1 lb., and sixpence for every additional pound.

8. **Registered Letters.**—Under section 38 of the Post and Telegraph Act 1901 provision is made for the registration of any letter, packet, or newspaper upon payment of the prescribed fee, and any person who sends a registered article by post may obtain an acknowledgment of its due receipt by the person to whom it is addressed by paying the prescribed fee (see hereunder) in advance at the time of registration in addition to the registration fee.

(i.) *Registration Fees.* The fee payable upon registration of an article is threepence, and the fee payable in order to obtain an acknowledgment of the delivery of the registered article is twopence halfpenny in addition. Registered letters must, as a rule, be handed in at least half-an-hour before the closing of the mails.

(ii.) *Number of Registered Letters Posted, 1906.* The subjoined table shews the number of registered letters posted in each State during the year 1906—except in the State of Queensland, for which returns are not available—classified according to the places to which they were despatched for delivery, viz.:—

REGISTERED LETTERS POSTED DURING 1906.

State.	Posted in each State for Delivery within that State.	Posted in each State for Delivery in other States.	Posted in each State for Delivery in New Zealand.	Posted in each State for Delivery in other Places outside the C'wealth.	Total.
New South Wales...	661,093	141,879	18,001	104,753	925,726
Victoria ...	876,714	72,434	7,794	43,356	1,000,298
Queensland ...	*	*	*	*	*
South Australia ...	166,102	26,986	1,128	11,682	205,898
Western Australia	246,183	46,165	1,460	18,497	312,305
Tasmania ...	164,159	12,373	1,020	4,809	182,361
† Commonwealth	2,114,251	299,837	29,403	183,097	2,626,588

* Returns not available. † Exclusive of Queensland.

9. **Ocean Mail Services.**—The question of regular steamship communication with Europe was first mooted in Sydney, and a meeting was held there in 1846 to consider the question. A committee was appointed to gather information on the subject, and eventually this body recommended the establishment of a steam service *via* Torres Straits and Singapore. No further step was, however, taken until 1849, when the Admiralty Department in London advertised for tenders for the conveyance of the mails between Singapore and Sydney. The tender of a company called the Indian and Australian Steamship Company was accepted, and a contract was entered into, but the company became involved in financial difficulties, and failed to carry out their undertaking. The

discovery of gold in Victoria, and the consequent increase in the population and commercial importance of Melbourne, induced the Imperial authorities to modify the conditions and to again invite tenders for a service between Singapore and Sydney, *via* King George's Sound, Adelaide, and Melbourne. The tender of the Peninsular and Oriental Company was accepted, and the service was inaugurated in September, 1852, by the arrival at Melbourne of the "Chusan." This service was continued until 1854, when it was stopped in consequence of the Crimean War, but in 1856 a line of steamers was again started, and the service was carried on by the Peninsular and Oriental Company, in conjunction with the Royal Mail Company, for some years.

(i.) *Mail Route via San Francisco.* The service *via* the Red Sea did not at that time give much satisfaction to the public, and was looked upon with a certain amount of disfavour in New South Wales and New Zealand. The effect was to stimulate the colonists to agitate for an improved service, and proposals were made for the establishment of a line of mail packets from Sydney to Panama *via* Wellington, by rail across the isthmus, and thence to Great Britain. The result was that in 1866 the line was started, and continued in operation until the end of 1868, when it was terminated through the failure of the company by which it had been carried out. The completion of the railway across the American continent in 1869, with its western terminus at San Francisco, opened up a new and agreeable route, and in that year a monthly service was inaugurated by the Union Steamship Company, in conjunction with the Pacific Steamship Company, from Sydney to San Francisco *via* Auckland. This service was subsidised to the extent of £37,000 per annum, of which New South Wales paid £25,750 and New Zealand £11,250, and was continued until November, 1890, when a new contract was entered into and the amount of the subsidy largely reduced, the amount of the contribution being based upon the weight of mail matter carried. Various extensions of the contract were made, but the last agreement made between the New Zealand Government and the Oceanic Steamship Company of San Francisco expired on the 10th November, 1906, and has not since been renewed.

(ii.) *Route via Suez Canal.* The establishment of a mail route *via* America had the effect of stimulating the steamship owners who were engaged in the service *via* Suez, and from that time there was a marked improvement in the steamers, as well as in the punctuality and speed with which the mails were delivered. The Peninsular and Oriental Company have, with very few interruptions, carried mails from the Australian States almost from the inception of the ocean steam service. Towards the end of 1878, the Orient-Pacific Company commenced carrying mails between Australia and the United Kingdom, and has continued to do so ever since. New contracts were entered into with the Peninsular and Oriental and the Orient Pacific Companies for a weekly service, subsidised by the Imperial Government and by all the States of Australia, to commence on the 1st February, 1898, for a period of seven years. The total amount of the subsidy was £170,000 per annum, of which £98,000 was payable by the Imperial Government and £72,000 by the Australian States in proportion to their population. These contracts expired on the 31st January, 1905, and pending negotiations for a new contract the mails were carried at poundage rates. On the 1st February, 1905, the Peninsular and Oriental Company commenced its eighth Australian contract with the British Postmaster-General on behalf of the Imperial Post Office only, and in connection with the India and China mail services, one payment being arranged for the whole service, and the Commonwealth Government not, as hitherto, being a party to the contract. Mails are still carried from Australia by the Peninsular and Oriental Company, but are carried at poundage rates and not under contract with the Commonwealth. On the 25th April, 1905, the Orient Pacific Company concluded a new contract with the Commonwealth Government for a fortnightly service between England and Australia, and the mails are now carried under this contract. The subsidy agreed upon is £120,000 per annum; the contract expired on the 31st January, 1908, but has been extended until 1910, when a new mail contract comes into operation. The contract time is twenty-nine days between Adelaide and Naples, and the agreement contains conditions that only white labour is to be employed, and that steamers used in the service are to be fitted for the conveyance of refrigerated cargo. The Orient Company have stipulated for liberty to cancel the contract at six months' notice, if any new legislation is imposed which would be detrimental to the Company's interest, unless the Federal Government indemnify them by an increase in subsidy to the extent of the loss imposed. Fremantle has, since the year 1900, been the first and last port of call for the mail steamers to Europe, in lieu of Albany, the original port of call; the Peninsular and Oriental and Orient-Pacific Companies' steamers sail alternately conveying the weekly homeward and outward mails.

(a) *The New Mail Contract.* On the 1st January, 1906, tenders were invited by the Commonwealth Postmaster-General for a fortnightly mail service between Adelaide and Brindisi, to alternate with a similar service to be provided by the Imperial Government, and a contract was entered into with Sir James Laing and Company Limited providing for a service at an annual subsidy of £125,000. This contract, however, fell through, and new tenders were accordingly called for. On the 15th November, 1907, an agreement was entered into with the Orient Steam Navigation Company Limited providing for a fortnightly service for a period of ten years, commencing in February, 1910. The mail service is to be carried out by existing vessels belonging to the company and by five new mail ships, to be specially built, of at least 11,000 tons gross registered tonnage and of not less than seventeen knots speed. Two more new vessels are to be added within eighteen months and six years respectively from February, 1910. The vessels are to call at Fremantle, Adelaide, Melbourne, Sydney, and Brisbane, and at least six of them at Hobart during the months of February to May, inclusive. The voyage from Brindisi to Adelaide is to be completed within twenty-six days fourteen hours, and from Adelaide to Brindisi within twenty-seven days two hours, but the latter period may be exceeded by thirty-six hours during the prevalence of the south-west monsoon. The amount of the subsidy is fixed at £170,000 per annum; but, if the earnings of the company be decreased, or the expenses increased, by reason of any Commonwealth shipping legislation passed subsequently to the date of the agreement, to the extent of not less than £5000 a year, the contractors have the right to terminate the agreement unless the subsidy is increased. Insulated space of not less than 2000 tons of forty cubic feet is to be provided in each of the new vessels, and the freights are not to exceed one halfpenny per lb. for butter and sixty shillings per ton for fruit. White labour only is to be employed, and no discrimination is to be made between unionists and non-unionists. If before or during the sixth year of the period of the contract an accelerated service is provided by any competing line of mail ships, the contractors must, if so required by the Postmaster-General, provide a service equal to the competing service, at an increased subsidy, to be determined by agreement or arbitration. The Commonwealth flag must be flown on the mail ships, which the Commonwealth has the right to purchase at a valuation at any time. Within six months of the Postmaster-General establishing a permanent wireless telegraphy station at Rottnest Island, or at any point on the coast between Fremantle and Brisbane, the company must fit the mail ships with wireless telegraphy installations.

(b) *French and German Subsidised Mail Services.* Vessels belonging to the Messageries Maritimes and the Norddeutscher Lloyd, which are under contract respectively with the French and German Governments to convey mails monthly between Marseilles and New Caledonia and between Bremen and Sydney, *via* Genoa, also carry mails for the Commonwealth Government from Australia to Europe at poundage rates. The Messageries Maritimes service commenced in November, 1882; the total tonnage of vessels belonging to this company in the Australian service at the end of the year 1907 was 30,014 tons, the amount of the annual subsidy granted by the French Government being £120,000. The first contract for the establishment and maintenance of a mail steamship line between Germany and Australia was made between the Imperial German Government and the Norddeutscher Lloyd in 1885, and the service was inaugurated in July, 1886, with the steamer "Salier."

(iii.) *Route via Vancouver and Canadian-Pacific Railway.* During the year 1893 a direct monthly service was started between Sydney and Vancouver, in British Columbia, *via* Wellington, in New Zealand, and thence to Liverpool *via* the Canadian-

Pacific Railway, the New South Wales Government paying an annual subsidy of £10,000 for the maintenance of this service for a period of three years. In 1896 the agreement was renewed for a further period of three years, and in 1899 was again renewed for four years, subject to the same terms and conditions, except that the route was *via* Brisbane instead of Wellington. The contract was further extended, at an increased subsidy, from time to time until the 31st July, 1907, and afterwards, at a subsidy of £26,626 per annum, for a period of two years from the 1st August, 1907.

(iv.) *Other Ocean Mail Services.* In addition to the mails *via* the Suez Canal and *via* Vancouver a number of other services, both regular and irregular, are maintained between the Commonwealth and various parts of the world, and also between the principal ports in the various States and a number of small ports in the less settled parts of the Commonwealth which are inaccessible by rail.

The following statement gives a summary, in so far as returns are available, of all mail services maintained between the Commonwealth and other countries and between ports in the Commonwealth:—

SUMMARY OF MAIL SERVICES, COMMONWEALTH OF AUSTRALIA, 1906.

Description of Service.	Frequency of Service.	Ports between which Service is maintained.	Particulars regarding Subsidies.
1. *To and from Europe, via Suez—*			
(*a*) Peninsular and Oriental* ...	Fortnightly	Adelaide, Fremantle and London, *viâ* Marseilles	Subsidised by Imperial Government. Mails from Aust. at poundage rates
(*b*) Orient Pacific*	"	Adelaide, Fremantle & London, *via* Naples	Subsidised. Date of agreement, April, 1905. Term extended to Feb., 1910. Amt. of subsidy, £120,000. Subsidy paid by all States on a *per capita* basis.
(*c*) Messageries Maritimes	Monthly	New Caledonia and Marseilles, *via* Fremantle and Adelaide	Subsidised by French Government. Mails from Aust. at poundage rates.
(*d*) Norddeutscher Lloyd	"	Fremantle, Adelaide & Bremen, *via* Genoa	Subsidised by German Government. Mails from Aust. at poundage rates.
2. *To and from Europe, via Vancouver*† Canadian Australian Steamship Co.	"	Sydney and Vancouver, B.C., *via* Brisbane	Subsidised by agreement dated 31st July, 1907, for two years. Amount of subsidy, £26,626. Subsidy paid by all States on a *per capita* basis.
3. *To and from New Zealand—*			
(*a*) Conjointly by Union S.S. Co. and Huddart Parker Proprietary	Weekly	Sydney, Melbourne, Hobart, Bluff, Dunedin, Christchurch and Wellington	Poundage rates.
(*b*) Do. do. do. ...	"	Sydney, Hobart, and Auckland	" "
(*c*) Conjointly by Shaw, Savill, and Albion Co. & N.Z. Shipping Co.	Fortnightly	Hobart, Bluff, Dunedin, and Wellington	" "
(*d*) Other steamers	Irregularly, when convenient	Sydney, Melbourne, and Wellington	" "
4. *To and from Northern Ports of Qld.—*			
(*a*) Australian United Steam Navigation Co.	Weekly	Brisbane, Gladstone, Townsville, Cairns, Mourilyan, Geraldton, Pt. Douglas & Cookt'n.	Subsidised by agreement dated 29th Nov., 1906, for three years. Amount of subsidy, £17,000.
(*b*) Do. do. do. ...	Once every three weeks	Brisbane, Normanton & Burketown, *via* Townsville, Cooktown, and Thursday Island	Subsidised by agreement dated 16th January, 1906, for three years. Amount of subsidy £6000. Subsidies under 4 (*a*) and (*b*) paid by Queensland.
(*c*) Other steamers	Irregularly, when convenient	Various	Poundage rates.
5. *To and from Ports in S. Australia—*			
(i.) NORTHERN TERRITORY—			
(*a*) The Eastern and Ausn., and the China Navigation Co.'s	Irregularly	To and from Adelaide, Melb'rne and Sydney, *via* North Queensland ports extending to China and Japan.	" "
(*b*) Jolly and Co.	Four times a year	Port Darwin and Victoria R., calling half-yearly at Roper River	Subsidised by agreement dated 1st April, 1904, for three years and nine months. Amount of subsidy, (*b*) £75; (*c*) £[illegible]; (*d*) £125 per voyage.
(*c*) " "	do.	Port Darwin & Boroloola	
(*d*) " "	Every eight weeks	" Wyndham	

Description of Service.	Frequency of Service.	Ports between which Service is maintained.	Particulars regarding Subsidies.
(ii.) TO SOUTH COAST PORTS—			
(*e*) Gulf Steamship Co.	Weekly	Pt. Adelaide & Kingscote	Subsidised by agreement dated 29th May, 1906, for one year and five months. Amount of subsidy, (*e*), £172; (*f*), £101; (*g*), £101; (*h*), £77; (*i*), £56.
(*f*) „ „	Twice a wk.	„ Edithburgh	
(*g*) „ „	„	„ Stansbury	
(*h*) „ „	Weekly	„ Ardrossan	
(*i*) „ „	„	„ Pt. Vincent	
(*j*) Adelaide Steamship Co. ...	„	„ Pt. Lincoln	Subsidised by agreement dated 2nd March, 1904, for three and three-quarter years. Amount of subsidy, £1495.
(*k*) Adelaide Steam Tug Co. ...	As required	Landing and embarking mails	Subsidised by agreement dated 17th July, 1906, for one year. Amount of subsidy, £498.
(*l*) „ „ ...	„	Port Pirie & Hummocks Hill	Subsidised without agreement. Amount of subsidy, £36. Subsidies under 5 (i.) (*a*,) (*b*), (*c*), (*d*), and (ii.) (*e*), (*f*), (*g*), (*h*), (*i*), (*j*), (*k*), (*l*) paid by South Australia.
6. *Western Australia*—			
(i) INTERSTATE—			
(*a*) By P. & O. and Orient Lines	Weekly	Fremantle and Adelaide	P. and O. at poundage rates. Orient line subsidised. See above 1 (*a*) and (*b*).
(*b*) Adelaide Steamship, the Ausn. United S. Navigation, and the Huddart, Parker lines	Conjointly, weekly	Fremantle, Albany, and Adelaide	Poundage rates.
(*c*) Messageries Maritimes, Norddeutscher Lloyd, the German and Ausn., and the White Star lines	Each mthly	Fremantle and Adelaide	„ „
(ii.) TO & FROM PORTS ON N.W. COAST			
(*a*) Adelaide Steamship Co. ...	Monthly	Fremantle and Derby	Subsidised by agreement dated 28th February, 1907, for three years. Amount of subsidy, £4000. Subsidy paid by Western Australia.
(*b*) „ „ ...	Once each sixty days	Fremantle & Wyndham	
(*c*) West. Aust. & Ocean S. Co.'s...	Fortnghtly	Fremantle and Broome.	Poundage rates
(*d*) Ausn. United S. Navigation and Adelaide S. Co.'s	Irregularly during the cattle se's'n	Fremantle, Derby, and Wyndham	„ „
(iii.) TO AND FROM PORTS ON S. COAST			
(*a*) Melbourne Steamship Co.	Weekly	Albany and Esperance	Subsidised by agreement dated 1st January, 1906, for three years. Amount of subsidy, £2000. Subsidy paid by Western Australia.
(*b*) „ „ ...	Fortnghtly	Albany & Israelite Bay	
(*c*) „ „ ...	Quarterly	Albany and Eucla	
7. *Tasmania*—			
(*a*) Union S. Co. and Huddart, Parker Proprietary	3 times a week	Melb'rne & Launceston	Subsidised by agreement dated 1st October, 1906, for three years. Amount of subsidy, £13,000. Of this amount £6000 is payable by Tasmania, and £7000 by all States on a *per capita* basis.
(*b*) Do. do. ...	Twice a wk.	„ Burnie	
(*c*) Do. do. ...	Weekly	Sydney and Hobart ...	Poundage rates.
(*d*) Union Steamship Co. ...	Fortnghtly	Sydney, Eden, Launceston, and Devenport	„ „
(*e*) New Zealand mail services, see above New Zealand, 3 (*a*) & (*b*)	Twice a wk.	Sydney, Melb'ne, Hobart, Bluff, Dunedin, Christchurch, Wellington, and Auckland	„ „
(*f*) To and from ports in Western districts	Irregular	Various	„ „
8. *To Eastern Ports*—			
(*a*) A. Currie and Co.	Once every five weeks	‡Melbourne, Sourabaya, Samarai, Batavia, and Singapore	Subsidised by Victorian Government for trade purposes at £2000 a year for three years from December, 1907. Mails at poundage rates.
(*b*) China Navigation, Eastern & Ausn., and Burns, Philp Co.'s	About three times a month	Sydney to Hong Kong, Manila, etc., *via* North Queensland ports	Poundage rates.
9. *South Africa*—			
White Star, Lund's, Currie's, and other Companies.	Irregularly	Various	„ „

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* Mails carried also to India *via* Colombo. † Carries also mails to Canada and the United States. ‡ Calling also irregularly at Sydney or Adelaide.

10. **Amount of Mail Subsidies Paid by Each State, 1901 to 1906.**—The mail subsidies are paid by the Commonwealth Postal Department, but are debited to the several States. The following table shews the total amount paid by each State by way of mail subsidies for each year from 1901 to 1906, inclusive:—

MAIL SUBSIDIES.—TOTAL AMOUNTS PAID BY EACH STATE, 1901 TO 1906.

State.	1901.	1902.	1903.	1904.	1905.	1906.
	£	£	£	£	£	£
New South Wales	35,888	35,901	36,670	39,802	45,679	57,110
Victoria ...	22,642	23,137	22,555	22,179	38,770	47,182
Queensland ...	39,297	38,815	40,876	42,971	41,292	42,145
South Australia ...	15,252	16,539	13,173	28,412	11,685	17,344
Western Australia*	12,091	13,143	16,727	16,712	16,162	18,643
Tasmania ...	9,162	9,682	10,096	13,546	17,706	17,039
Commonwealth ...	134,332	169,617	172,497	163,622	171,294	199,463

* Including tonnage and other dues refunded to the Adelaide Steamship Company in connection with the North-west Coast contract.

The following table shews the amount paid by each State in respect of each mail subsidy during the year 1906:—

MAIL SUDSIDIES.—AMOUNT PAID BY EACH STATE IN RESPECT OF EACH SUBSIDY, 1906.

State.	Orient-Pacific.	Vancouver Service.	Victoria-Tasmanian Service.	Northern Ports of Queensland.	South Coast of South Australia.	Western Australia.		Total.
						N.W. Coast.	South Coast.	
	£	£	£	£	£	£	£	£
N.S.W. ...	46,241	9,581	1,288	...	...	...	...	57,110
Victoria ...	38,231	7,898	1.053	...	...	...	...	47,182
Queensland...	16,316	3,412	*	22,417	...	...	...	†42,145
S. Australia...	11,699	2,441	327	...	2,877	...	...	17,344
W. Australia	8,013	1,613	220	...	...	‡5,547	3,250	18,643
Tasmania ...	5,641	1.175	10,223	...	...	...	...	17,039
C'wealth ...	126,141	26,120	†13,111	22,417	2,877	5,547	3,250	†199,463

* Not included in returns. † Excluding amount paid by Queensland in respect of Victorian-Tasmanian subsidy. ‡ Including £1213 tonnage and other dues refunded.

11. **Average and Fastest Time of Mails to and from London.**—Marvellous progress has been made in regard to the means of postal communication with the United Kingdom and the continents of Europe and America. In 1857 there was an unsatisfactory ocean mail service, which nominally brought monthly mails, with news nearly sixty days old: at the present time, though but fifty years have elapsed, there are four lines of modern ocean steamships, which bring the mails in about twenty-nine days to Adelaide, in addition to the monthly service *via* Vancouver, by which mails are sent from Sydney to London in thirty-five days. After leaving Fremantle, where the Western Australian mails are landed, the outward mail steamers *via* the Suez Canal all call at Adelaide.

where the remaining mails are landed and conveyed to their ultimate destination by rail. The subjoined table shews the average and the fastest times occupied in the conveyance of mails from London to Adelaide and *vice versâ* during the year 1906:—

AVERAGE AND FASTEST TIME OCCUPIED IN CONVEYANCE OF MAILS VIA SUEZ CANAL, BETWEEN LONDON AND ADELAIDE, AND VICE VERSA, DURING 1906.

Service.	London to Adelaide.				Adelaide to London.			
	Average Time.		Fastest Time.		Average Time.		Fastest Time.	
	Days.	Hours.	Days.	Hours.	Days.	Hours.	Days.	Hours.
Peninsular and Oriental S.N. Co., *via* Marseilles and Colombo...	28	10	28	1½	30	4	29	13
Orient-Pacific S. N. Co., *via* Suez and Naples	30	5	29	8	31	23	31	13
*Messageries Maritimes, *via* Marseilles	...		...		33	7	32	0
*Norddeutscher Lloyd, *via* Genoa	...		...		34	4	31	13

* No mails were received from London by the Messageries Maritimes or by the Norddeutscher Lloyd services.

The journey by rail from Adelaide, where the mails for the eastern States are landed, to Melbourne takes 17½ hours; from Melbourne to Sydney, 17¾ hours; while the through journey from Adelaide to Brisbane takes just over three days. The journey from Melbourne to Hobart occupies about seventeen hours.

The subjoined table shews the average and the fastest times occupied in the conveyance of mails between Sydney and London and *vice-versâ* by the mail routes *via* Vancouver and San Francisco respectively during the year 1906:—

AVERAGE AND FASTEST TIMES OCCUPIED IN CONVEYANCE OF MAILS, VIA VANCOUVER AND SAN FRANCISCO RESPECTIVELY, BETWEEN LONDON AND SYDNEY AND VICE-VERSA, DURING 1906.

Service.	London to Sydney.		Sydney to London.	
	Average Time.	Fastest Time.	Average Time.	Fastest Time.
	Days.	Days.	Days.	Days.
Canadian-Australian Line, *via* Vancouver	$37\frac{5}{13}$	35	$38\frac{3}{13}$	34
Oceanic Steamship Co., *via* San Francisco	38	35	36¾	33

12. **Letters, Packets, and Newspapers Transmitted by Different Ocean Mail Routes during the Year 1906.**—The subjoined table shews the number of letters, packets, and newspapers transmitted for interstate delivery and for delivery in countries other than Australia, by the different routes during the year 1906:—

NUMBER OF LETTERS, PACKETS, AND NEWSPAPERS RECEIVED AND DESPATCHED BY DIFFERENT OCEAN MAIL ROUTES, 1906.

Classification.	P. and O. Co., *via* Colombo and Marseilles.	Orient Royal Mail Line, *via* Suez and Naples.	Canadian Australian Steamers *via* Vancouver.	Oceanic S.S. Co., *via* San Francisco.	Norddeutscher-Lloyd *via* Genoa.	Messageries Maritimes *via* Marseilles.	Total by all Mail Steamers.
RECEIVED.							
INTERSTATE—							
Letters	1,490,261	1,855,537	6,034	26,016	39,565	25,717	3,443,130
Packets	389,931	344,966	1,257	4,332	7,782	4,241	752,509
Newspapers ...	1,196,304	1,338,408	2,639	13,937	17,952	11,393	2,580,633
OTHER COUNTRIES—							
Letters	3,035,477	3,283,182	372,227	394,501	60,717	24,895	7,120,999
*Packets	3,007,497	3,131,636	507,841	513,157	28,750	11,228	7,200,109
*Newspapers ...	917,626	974,717	87,272	145,372	5,554	2,118	2,132,659
DESPATCHED.							
INTERSTATE—							
Letters	1,424,857	1,802,530	2,620	...	26,002	35,380	3,291,389
Packets	262,767	306,884	792	...	2,207	5,699	578,349
Newspapers ...	1,142,004	1,180,666	3,831	...	6,635	14,858	2,347,994
OTHER COUNTRIES—							
Letters	2,511,563	2,660,524	173,734	315,464	14,107	13,430	5,688,822
Packets	428,796	478,913	34,963	56,808	767	1,258	1,001,505
Newspapers ...	1,015,975	1,042,529	86,090	168,564	2,450	2,967	2,318,575
TOTAL RECEIVED AND DESPATCHED.							
INTERSTATE—							
Letters	2,915,118	3,658,067	8,654	26,016	65,567	61,097	6,734,519
Packets	652,698	651,850	2,049	4,332	9,989	9,940	1,330,858
Newspapers ...	2,338,308	2,519,074	6,470	13,937	24,587	26,251	4,928,627
OTHER COUNTRIES—							
Letters	5,547,040	5,893,706	545,961	709,965	74,824	38,325	12,809,821
Packets	3,436,293	3,610,549	542,804	569,965	29,517	12,486	8,201,614
Newspapers ...	1,933,601	2,017,246	173,362	313,936	8,004	5,085	4,451,234

* In the returns for the States of New South Wales, Victoria, and South Australia the number of newspapers received from other countries is included in the number of packets received.

13. **Money Orders and Postal Notes.**—The issue of money orders and postal notes in the Commonwealth is regulated by sections 74 to 79 of the Post and Telegraph Act 1901. A money order, which may be issued for payment either within the Commonwealth or abroad, may not be granted for a larger sum than £20, nor a postal note, which is payable only within the Commonwealth, for a larger sum than twenty shillings. Money orders are sent direct from the Commonwealth to the United Kingdom, and to most of the British colonies and possessions; to the German Empire and German colonies; to Italy; and to the United States of America. Money orders, payable in Japan and China, are sent *via* Hong Kong; orders payable in all other countries are sent through the General Post Office in London, where new orders are issued and forwarded to the addresses of the payees, less threepence for every £5, or part thereof. In order that the full amount of the original order may be forwarded to the payee, this extra commission must be paid by the remitter.

(i.) *Value of Orders Issued and Drawn and of Notes Sold, 1906.*—The following table shews the total value of money orders issued and drawn, and of postal notes sold in each State and in the Commonwealth during the year 1906, together with the total amount of commission on money orders and poundage on postal notes received by the Postal Department:—

VALUE OF MONEY ORDERS ISSUED AND DRAWN AND OF POSTAL NOTES SOLD, TOGETHER WITH TOTAL AMOUNTS OF COMMISSION AND POUNDAGE RECEIVED IN EACH STATE DURING 1906.

State.	Value of Money Orders Issued.	Value of Money Orders Drawn.	Money Order Commission Received.	Value of Postal Notes Sold.	Poundage Received on Postal Notes.
	£	£	£	£	£
New South Wales ...	2,267,137	2,350,298	19,767	808,759	15,962
Victoria	814,564	1,222,551	8,987	690,137	14,842
Queensland	613,325	523,378	6,168	198,156	3,801
South Australia ...	269,233	293,300	3,424	136,967	2,913
Western Australia ...	835,072	543,256	7,391	163,358	2,888
Tasmania	259,496	200,835	3,022	84,156	1,398
Commonwealth ...	5,058,827	5,033,618	48,759	2,081,533	41,804

The net amount of commission received on money orders after adjustment with other Governments was £49,342.

(ii.) *Rates of Commission on Money Orders.* The rates of commission chargeable for the issue of money orders are as follows:—

RATES OF COMMISSION, MONEY ORDERS, 1906.

If Payable in–	For sums—							
	Not exceeding £2.	Exceeding £2, but not exceeding £5.	Exceeding £5, but not exceeding £7.	Exceeding £7, but not exceeding £10.	Exceeding £10, but not exceeding £12.	Exceeding £12, but not exceeding £15.	Exceeding £15, but not exceeding £17.	Exceeding £17, but not exceeding £20.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
State of issue	0 6	0 6	1 0	1 0	1 6	1 6	2 0	2 0
Other Australian States ...	0 6	0 9	1 6	1 6	2 3	2 3	3 0	3 0
New Zealand and Fiji ...	0 6	1 0	1 6	2 0	2 6	3 0	3 6	4 0
U. Kingdom & other countries...	Sixpence for each pound or fraction of a pound							

Remittances may also be made by telegraph to and from money order offices in the Commonwealth which are also telegraph or telephone offices, and to New Zealand. The charge for a telegraph money order is the cost of the telegram of advice in addition to the ordinary commission. The remitter must also send a telegram to the payee advising the transmission of the money, which telegram must be produced by the payee when applying for payment.

(iii.) *Rates of Poundage on Postal Notes.* The values of the notes issued have been so arranged that any sum of shillings and sixpences up to £1 can be remitted by not more than two of these notes. Broken amounts not exceeding fivepence (but not fractions of a penny) may be added by affixing postage stamps. The poundage or commission charged on notes of different denominations is as follows:—

Denomination of Note ...	6d. to 1s. 6d.	2s. to 4s. 6d.	5s.	7s. 6d.	10s. to 20s.
Poundage charged ...	½d.	1d.	1½d.	2d.	3d.

14. Classification of Money Orders Issued and Paid.—The following tables shew the number and value of money orders issued in each State and classified according to the country where payable, and also the number and value of money orders paid in each State and classified according to the country of issue during the year 1906:—

MONEY ORDERS ISSUED IN EACH STATE, CLASSIFIED ACCORDING TO COUNTRY WHERE PAYABLE, 1906:—

State in which Issued.	Where Payable.				Total.
	In the Commonwealth.	In New Zealand.	In the United K'dom.	In Other Countries.	
			NUMBER.		
New South Wales	531,966	7,315	30,292	9,581	579,154
Victoria... ...	193,230	5,114	24,131	7,778	230,253
Queensland ...	142,573	1,344	14,995	5,531	164,443
South Australia ...	63,474	780	8,759	2,715	75,728
Western Australia	170,488	1,330	19,493	1,815	193,126
Tasmania ...	78,200	1,760	5,190	1,261	86,411
Commonwealth	1,179,931	17,643	102,860	28,681	1,329,115
			VALUE.		
	£	£	£	£	£
New South Wales	2,132,871	23,359	68,617	42,290	2,267,137
Victoria... ...	720,658	16,156	50,825	26,925	814,564
Queensland ...	538,478	4,654	36,125	34,068	613,325
South Australia ...	241,219	2,698	16,893	8,422	269,232
Western Australia	760,194	7,059	58,776	9,043	835,072
Tasmania ...	239,999	7,475	9,320	2,702	259,496
Commonwealth	4,633,419	61,401	240,556	123,450	5,058,826

MONEY ORDERS PAID IN EACH STATE CLASSIFIED ACCORDING TO THE COUNTRY OF ISSUE, 1906.

State in which Paid.	Where Issued.				Total.
	In the Commonwealth.	In New Zealand.	In the United Kingdom.	In other Countries.	
			NUMBER.		
New South Wales	542,919	37,737	13,926	10,989	605,571
Victoria ...	263,411	25,328	11,625	10,018	310,382
Queensland ...	127,177	3,026	4,809	2,156	137,168
South Australia ...	72,868	1,772	2,886	1,400	78,926
Western Australia	113,764	1,470	3,588	1,096	119,918
Tasmania ...	57,527	4,982	1,704	1,933	66,146
Commonwealth ...	1,177,666	74,315	38,538	27,592	1,318,311
			VALUE.		
	£	£	£	£	£
New South Wales	2,175,378	85,366	40,832	48,722	2,350,298
Victoria ...	982,151	60,526	36,232	43,642	1,122,551
Queensland ...	490,376	8,980	14,059	9,963	523,378
South Australia ...	273,709	5,226	8,229	6,136	293,300
Western Australia	521,723	4,328	11,735	6,470	543.256
Tasmania ...	177,764	12,276	4,645	5,150	200,835
Commonwealth ...	4,621,101	176,702	115,732	120,083	5,033,618

In the above tables money orders payable or issued in foreign countries, which have been sent from or to the Commonwealth through the General Post Office at London, are included in those payable or issued in the United Kingdom; orders payable or issued in Japan or China and which are sent through Hongkong, are included in those payable or issued in other countries.

15. **Number and Value of Money Orders Issued.**—The following table shews the total number and face value of money orders issued in each State during each year from 1901 to 1906, inclusive:—

NUMBER AND VALUE OF MONEY ORDERS ISSUED IN EACH STATE, 1901 TO 1906.

State.	1901.	1902.	1903.	1904.	1905.	1906.
			NUMBER.			
New South Wales	482,768	538,796	541,392	559,908	579,310	579,154
Victoria ...	228,931	217,634	215,694	221,578	221,732	230,253
Queensland ...	157,552	137,168	137,048	141,965	148,284	164,443
South Australia ...	99,526	78,041	71,933	73,669	73,999	75,728
Western Australia	192,477	189,514	197,407	198,675	200,501	193,126
Tasmania ...	156,407	121,397	97,187	93,410	88,261	86,411
Commonwealth	1,317,661	1,282,550	1,260,661	1,289,205	1,312,087	1,329,115
			VALUE.			
	£	£	£	£	£	£
New South Wales	1,637,488	1,761,149	1,772,186	1,834,934	2,076,146	2,267,137
Victoria ...	700,618	706,791	721,017	747,875	759,763	814,564
Queensland ...	539,450	506,990	501,375	525,869	556,183	613,325
South Australia ...	264,330	246,826	251,655	257,034	264,608	269,233
Western Australia	725,584	768,751	839,073	860,810	849,492	835,072
Tasmania ...	325,176	290,113	260,705	270,688	264,768	259,496
Commonwealth	4,192,646	4,280,620	4,346,011	4,497,210	4,770,960	5,058,827

16. **Number and Value of Money Orders Paid.**—The following table shews the total number and face value of money orders paid in each State during each year from 1901 to 1906, inclusive:—

NUMBER AND VALUE OF MONEY ORDERS PAID IN EACH STATE, 1901 TO 1906.

State.	1901.	1902.	1903.	1904.	1905.	1906.
			NUMBER.			
New South Wales	478,520	545,861	553,283	564,685	583,895	605,571
Victoria ...	299,525	306,510	318,766	319,886	312,244	310,382
Queensland ...	102,628	105,556	115,927	119,444	124,280	137,168
South Australia ...	81,078	82,479	82,930	83,581	81,614	78,926
Western Australia	82,080	85,700	100,155	107,401	118,164	119,918
Tasmania ...	295,278	125,317	73,379	71,178	66,079	66,146
Commonwealth	1,339,109	1,251,423	1,244,440	1,266,175	1,286,276	1,318,111

NUMBER AND VALUE OF MONEY ORDERS PAID IN EACH STATE, 1901 TO 1906.

State.	1901.	1902.	1903.	1904.	1905.	1906
			VALUE.			
	£	£	£	£	£	£
New South Wales	1,669,730	1,812,063	1,835,295	1,922,787	2,182,629	2,350,298
Victoria ...	1,005,067	1,053,313	1,121,807	1,125,557	1,102,652	1,122,551
Queensland ...	398,429	400,042	431,091	440,409	466,876	523,378
South Australia ...	283,875	295,372	310,058	307,039	303,526	293,300
Western Australia	338,623	372,689	451,774	481,348	513,047	543,256
Tasmania ...	386,586	228,958	191,949	193,192	190,872	200,835
Commonwealth	4,082,310	4,162,437	4,341,974	4,470,332	4,759,602	5,033,618

17. **Classification of Postal Notes Issued and Paid.**—The subjoined table shews the number and value of postal notes issued and paid in each State and in the Commonwealth, classified according to their place of issue:—

NUMBER AND VALUE OF POSTAL NOTES ISSUED AND PAID, CLASSIFIED ACCORDING TO PLACE OF ISSUE, 1906.

State.	Issued and Paid in State of Issue.		Issued in State and Paid in other States.		Issued in other States and Paid in State.		Total Issued and Paid in each State.	
	Number.	Value.	Number.	Value.	Number.	Value.	Number.	Valae.
		£		£		£		£
New South Wales	1,920,843	710,053	230,586	98,705	259,804	97,920	2,411,233	906,678
Victoria	1,667,509	619,522	179,278	70,615	278,600	121,159	2,125,387	811,296
Queensland ...	369,934	140,889	139,014	51,528	35,350	15,723	544,298	208,140
South Australia ...	317,738	108,084	82,711	29,555	78,229	40,538	478,678	178,177
Western Australia	243,226	112,883	89,763	50,309	15,929	7,441	348,918	170,033
Tasmania ...	171,633	58,373	65,938	25,783	119,913	45,025	357,484	129,181
Commonwealth ...	4,690,883	1,749,804	787,290	326,495	787,925	327,806	6,265,998	2,403,506

The following statement shews the number of postal notes of each denomination paid in the Commonwealth during the year 1906:—

NUMBER OF POSTAL NOTES PAID, CLASSIFIED ACCORDING TO DENOMINATION, 1906.

Denomination.	Number Paid.	Denomination.	Number Paid.	Denomination.	Number Paid.
s. d.		s. d.		s. d.	
1 0	230,464	3 6	282,015	10 0	708,358
1 6	159,353	4 0	476,145	10 6	134,813
2 0	306,856	4 6	315,329	15 0	340,325
2 6	374,690	5 0	697,617	20 0	716,099
3 0	451,322	7 6	285,322		
				Total ...	5,478,708

18. **Number and Value of Postal Notes Issued.**—The following table shews the total number and face value of postal notes issued in each State during each year from 1901 to 1906, inclusive:—

NUMBER AND VALUE OF POSTAL NOTES ISSUED IN EACH STATE, 1901 TO 1906.

State.	1901.	1902.	1903.	1904.	1905.	1906.
			NUMBER.			
New South Wales...	1,400,844	1,409,180	1,571,612	1,756,996	2,028,269	2,151,429
Victoria	1,361,311	1,387,039	1,475,853	1,635,435	1,743,227	1,846,787
Queensland ...	307,170	290,063	346,375	398,366	456,479	508,948
South Australia ...	297,444	296,997	320,740	344,831	378,835	400,449
Western Australia...	72,616	122,877	186,263	231,846	285,502	332,989
Tasmania ...	67,204	77,665	121,653	158,037	206,309	237,571
Commonwealth...	3,506,589	3,583,821	4,022,496	4,525,511	5,098,621	5,478,173
			VALUE.			
	£	£	£	£	£	£
New South Wales...	508,432	506,159	581,604	655,471	723,168	808,759
Victoria	523,210	528,381	558,976	617,386	652,704	690,138
Queensland ...	117,087	110,509	130,651	151,770	171,447	192,417
South Australia ...	100,585	102,112	113,076	121,321	132,329	137,639
Western Australia...	21,002	55,841	90,939	115,416	138,506	162,592
Tasmania ...	20,095	24,851	41,930	56,820	72,352	84,156
Commonwealth...	1,290,411	1,327,853	1,517,176	1,718,184	1,890,506	2,075,701

19. **Number and Value of Postal Notes Paid.**—The following table shews the total number and face value of postal notes paid in each State during each year from 1901 to 1906, inclusive:—

NUMBER AND VALUE OF POSTAL NOTES PAID IN EACH STATE, 1901 TO 1906.

State.	1901.	1902.	1903.	1904.	1905.	1906.
			NUMBER.			
New South Wales...	1,399,712	1,423,369	1,566,508	1,733,142	1,958,681	2,180,647
Victoria	1,392,559	1,432,734	1,552,775	1,724,486	1,828,523	1,946,109
Queensland ...	288,318	259,455	298,688	331,737	368,272	405,284
South Australia ...	294,907	293,590	322,341	349,039	377,481	395,967
Western Australia...	*66,740	112,934	186,238	*245,514	294,218	259,155
Tasmania ...	62,725	77,445	54,894	212,418	257,002	291,546
Commonwealth...	3,504,961	3,599,527	3,981,444	4,596,336	5,079,177	5,478,708
			VALUE.			
	£	£	£	£	£	£
New South Wales...	507,740	514,048	580,774	646,682	724,669	807,973
Victoria	532,244	544,979	591,805	655,857	695,575	740,681
Queensland ...	108,746	97,045	113,434	127,332	140,098	156,612
South Australia ...	97,576	102,651	118,003	129,265	141,653	148,622
Western Australia...	*14,115	37,529	90,078	119,763	145,507	120,324
Tasmania ...	19,421	28,179	22,989	80,118	91,419	103,398
Commonwealth...	1,279,842	1,324,431	1,517,083	1,759,017	1,938,921	2,077,610

* Estimated.

20. **The Value Payable Post.**—This is a system under which the Postal Department undertakes to deliver registered articles sent by parcel post within the Commonwealth, and to recover from the addressee on delivery a specified sum of money fixed by the sender, and to remit the sum to the sender by money order, for which the usual commission is charged. The object of the system is to meet the requirements of persons who wish to pay at the time of receipt for articles sent to them, and also to meet the requirements of traders and others who do not wish their goods to be delivered except on payment. In addition to the ordinary postage, commission on the value of the articles transmitted at the rate of twopence on sums not exceeding ten shillings, and one penny for each additional five shillings or part thereof, must be prepaid by postage stamps affixed to the articles distinct from the postage and marked "commission." The registration fee (threepence) and the proper postage must also be prepaid. If the addressee refuse delivery, the parcel is returned to the sender free of charge. The subjoined statement gives particulars of the number and value of parcels sent through the Value Payable Post in each State during the years 1905 and 1906. The system has been established in Queensland for some years, and was only extended to the whole Commonwealth with the advent of Federal control of the post office:—

VALUE PAYABLE PARCELS POST.—NUMBER POSTED. VALUE COLLECTED AND REVENUE, 1905 AND 1906.

State.	Number of Parcels Posted.		Value Collected.		Revenue, including Postage, Commission on Value, Registration and Money Order Commission.	
	1905.	1906.	1905.	1906.	1905.	1906.
	No.	No.	£	£	£	£
New South Wales	1,839	3,798	2,644	6,025	257	579
Victoria ...	390	731	1,042	1,220	39*	93
Queensland ...	18,095	25,039	23,594	33,507	2,496	3,556
South Australia ...	95	51	104	59	11	9
Western Australia	4,494	6,539	7,637	11,198	667	971
Tasmania ...	7	10	14	17	1	1
Commonwealth	24,920	36,168	35,035	52,026	3,471	5,209

* Exclusive of postage.

21. **Transactions of the Dead Letter Office.**—Under sections 45 to 53 of the Post and Telegraph Act 1901 the Postmaster-General may cause all unclaimed and undelivered postal articles originally posted within the Commonwealth which have been returned from the place to which they were forwarded to be treated as unclaimed articles and opened. Every unclaimed letter and postal article must be kept for the prescribed period at the office to which it has been transmitted for delivery, and must then be sent to the General Post Office. Letters and packets originally posted elsewhere than in the Commonwealth are returned to the proper authorities in the country in which they were so posted, or, if originally posted in another State, are returned to the General Post Office of that State; but unclaimed or undelivered newspapers may be forthwith sold, destroyed, or used for any public purpose. Opened postal articles not containing anything of value are returned to the writer or sender if his name and address can be ascertained, but may otherwise be destroyed forthwith. As regards opened letters and packets containing valuable or saleable enclosures, a list and memorandum of the contents are kept, and a notice is sent to the person to whom the letter or packet is addressed if he be known, or otherwise to the writer or sender thereof if he be known. Upon application within three months of the date of such notice the letter or packet may be claimed by the addressee or, failing him, by the writer or sender. If unclaimed within three months the letter and contents may be destroyed or sold, and the proceeds paid into the consolidated revenue fund. The following table shews the total number of letters, postcards, and packets dealt with by the Dead Letter Offices in the Common-

wealth during the year 1906, together with the number of inland, interstate, and international letters either returned to writers, delivered, etc., destroyed, or returned as unclaimed:—

TRANSACTIONS OF DEAD LETTER OFFICES IN THE COMMONWEALTH DURING THE YEAR 1906.

Particulars.	Inland.	Interstate.	International (including NewZealand).	Total.
LETTERS.				
Returned to writers, delivered, etc.	693,648	67,084	52,199	812,931
Destroyed in accordance with Act	116,749	16,281	12,356	145,386
Returned to other States or Countries as unclaimed	...	69,799	45,079	114,878
Total	810,397	153,164	109,634	1,073,195
POSTCARDS.				
Returned to writers, delivered, etc.	23,895	6,907	6,493	37,295
Destroyed in accordance with Act	15,739	3,949	5,830	25,518
Returned to other States or Countries as unclaimed	...	9,602	8,137	17,739
Total	39,634	20,458	20,460	80,552
PACKETS.				
Returned to writers, delivered, etc.	589,888	21,397	7,865	619,150
Destroyed in accordance with Act	176,622	81,669	88,807	347,098
Returned to other States or Countries as unclaimed	...	49,686	108,821	158,507
Total	766,510	152,752	205,493	1,124,755
Grand Total	1,616,541	326,374	335,587	2,278,502

22. **Post Offices and Receiving Offices and Employes.**—The following tables shew, as far as returns are available, the numbers of post and receiving offices and the corresponding numbers of permanent employés in each State and in the Commonwealth at the end of each year from 1901 to 1906, inclusive: —

NUMBER OF POST OFFICES AND RECEIVING OFFICES, 31ST DECEMBER, 1901 TO 1906.

State.	1901.		1902.		1903.		1904.		1905.		1906.	
	Post Offices.	Receiving Offices.	Post Offices.	Receiving Offices.	Post Offices.	Receiving Offices.	Post Offices.	Receiving Offices.	Post Offices.	Receiving Offices.	Post Offices.	Receiving Offices.
New South Wales	1,684	524	1,693	523	1,708	520	1,726	513	1,744	522	1,769	519
Victoria... ...	1,637	18	1,645	18	1,646	18	1,652	18	1,655	18	1,659	657
Queensland * ...	411	823	433	867	441	884	450	921	447	913	468	886
South Australia...	713	—	702	—	706	—	711	—	711	—	706	7
West Australia ...	187	28	197	28	218	25	243	34	261	34	281	57
Tasmania† ...	376	—	369	6	370	8	371	12	370	9	373	19
Commonwealth	5,008	1,365	5,039	1,414	5,089	1,430	5,153	1,464	5,188	1,462	5,256	2,145

* For the years 1901, 1902, and 1903 the number of receiving offices is included in post offices in the official returns, and separate figures here given are estimated. † The return for 1901 includes both post offices and receiving offices.

NUMBER OF EMPLOYES AND NUMBER OF MAIL CONTRACTORS, 31ST DECEMBER, 1901 TO 1906.

State.	1901.		1902.		1903.		1904.		1905.		1906.	
	Employés.	Mail Contractors.	Employés.	Mail Contractors.	Employés.	Mail Contractors.	Employés.	Mail Contractors.	Employés.	Mail Contractors.	Employés.	Mail Contractors.
New South Wales	5,636	984	5,724	973	5,726	996	5,763	1,006	5,890	1,029	5,943	1,037
Victoria ...	3,962	890	3,955	880	4,017	914	4,011	934	4,086	912	4,896	919
Queensland* ...	2,616	—	2,627	—	2,686	—	2,641	—	2,640	—	2,610	630
South Australia†	1,945	—	1,974	—	1,973	—	2,046	—	1,727	259	1,734	255
West. Australia ...	1,303	140	1,286	136	1,331	140	1,316	150	1,273	154	1,941	152
Tasmania‡ ...	865	—	—	—	—	—	—	—	—	—	811	164
Commonwealth	16,327	2,014	15,566	1,989	15,733	2,050	15,907	2,090	15,616	2,354	17,935	3,157

* Country postmasters and receiving officers included in employés. † Non-official postmasters are included in employès. ‡ The return for 1901 includes all persons in the pay of the Postal Department.

23. **Miles of Postal Lines (including Railways) and Mail-miles Travelled.**—The following table shews the length of route travelled by postal conveyances, and the number of mail-miles travelled in each State and in the Commonwealth for each year from 1901 to 1906 inclusive:—

MILES OF POSTAL LINES (INCLUDING RAILWAY LINES), 31ST DECEMBER, 1901 TO 1906.

State.	1901.	1902.	1903.	1904.	1905.	1906.
New South Wales	37,219	36,045	36,000	36,262	36,480	40,178
Victoria ...	12,874	12,898	12,940	13,003	13,369	13,270
Queensland ...	34,441	35,320	35,621	*34,700	*33,800	32,909
South Australia...	16,482	16,059	16,207	16,075	15,418	15,309
Western Australia	13,147	13,158	13,236	13,431	13,547	*13,647
Tasmania ...	2,915	2,915	2,915	3,231	3,236	*3,358
Commonwealth...	117,078	116,395	116,919	116,702	115,850	118,671

* Estimated.

NUMBER OF MAIL-MILES TRAVELLED, EXCLUSIVE OF RAILWAY MILEAGE, DURING THE YEARS 1901 TO 1906.

New South Wales	12,117,900	12,042,300	11,986,800	11,990,800	11,989,968	12,112,219
Victoria ...	4,008,424	4,016,536	4,004,056	4,014,228	3,655,200	3,679,402
Queensland ...	4,210,839	4,047,615	4,252,083	*4,242,000	*4,231,190	4,221,800
South Australia	*1,902,000	*1,940,000	*1,929,000	*1,905,000	*1,935,000	1,935,182
Western Australia	1,090,050	1,096,200	1,092,525	1,107,850	1,107,989	*1,108,000
Tasmania ...	1,597,591	1,597,591	1,597,591	1,789,460	1,792,580	*1,860,200
Commonwealth	24,926,804	24,740,242	24,862,055	25,049,338	24,712,637	24,916,803

* Estimated.

24. **Gross Revenue of Postal Department.**—The following table shews the gross revenue of the Postal Department in each State for the years 1901 to 1906, inclusive,

under three heads, viz., the Postal, the Telegraph, and the Telephone branches. In the Postal branch is included the revenue derived from money-order commissions, poundage on postal notes, private boxes and bags, and miscellaneous sources:—

GROSS REVENUE OF POSTAL DEPARTMENT, 1901 TO 1906.

State.	1901.	1902.	1903.	1904.	1905.	1906.
POSTAL BRANCH.						
	£	£	£	£	£	£
New South Wales ...	596,552	610,434	652,761	705,393	743,986	802,353
Victoria	437,894	432,311	448,486	470,886	480,979	541,430
Queensland	203,128	204,520	191,931	227,715	233,523	255,060
South Australia ...	148,336	157,474	166,400	152,429	161,920	180,827
Western Australia ...	109,335	121,303	122,862	135,053	157,837	153,818
Tasmania	72,009	64,834	75,412	84,605	89,569	93,392
Commonwealth ...	1,567,254	1,590,876	1,657,852	1,776,081	1,867,814	2,026,880
TELEGRAPH BRANCH.						
New South Wales ...	191,664	187,802	154,839	151,036	150,830	186,962
Victoria	120,385	125,252	106,839	111,287	124,994	133,536
Queensland	83,939	85,514	83,266	75,649	88,285	89,772
South Australia ...	106,853	84,612	74,840	81,116	87,157	94,074
Western Australia ...	82,533	81,824	68,137	69,641	71,834	69,678
Tasmania	17,064	16,892	17,289	16,487	15,455	16,347
Commonwealth ...	602,438	581,896	505,210	505,216	538,555	590,369
TELEPHONE BRANCH.						
New South Wales ...	81,852	96,278	105,002	116,328	127,514	144,938
Victoria	62,019	76,326	86,600	88,633	102,396	108,437
Queensland	20,938	24,619	27,312	28,011	31,765	36,927
South Australia ...	20,617	21,925	23,209	26,351	25,815	30,075
Western Australia ...	26,950	29,464	30,324	30,970	33,995	36,239
Tasmania	6,339	8,704	8,910	10,155	11,108	11,887
Commonwealth ...	218,715	257,316	281,366	300,448	332,593	368,498
TOTAL POSTAL REVENUE.						
New South Wales ...	870,068	894,514	912,602	972,757	1,022,330	1,134,248
Victoria	620,298	633,889	641,925	670,806	708,369	783,403
Queensland	308,005	314,653	302,518	331,375	353,573	381,759
South Australia ...	275,806	264,011	264,449	259,896	274,892	304,976
Western Australia ...	218,818	232,591	221,323	235,664	263,666	259,735
Tasmania	95,412	90,430	101,611	111,247	116,132	121,626
Commonwealth ...	2,388,407	2,430,088	2,444,428	2,581,745	2,738,962	2,985,747

25. **Expenditure in respect of the Postal Departments.**—The subjoined table shews the total expenditure in respect of the Postal Departments in each State. The figures given include certain items of expenditure, such as rent, repairs and maintenance of buildings, fittings and furniture, sanitation, water supply, and new buildings and additions which are under the control of the Department of Home Affairs:—

EXPENDITURE IN RESPECT OF POSTAL DEPARTMENTS IN EACH STATE, 1901 TO 1907.

State.	1901.	1902.	1903.	1904.	1905.	1906.
	£	£	£	£	£	£
New South Wales	790,783	759,619	884,963	920,390	970,808	966,498
Victoria	517,609	550,227	582,520	624,841	627,735	668,046
Queensland	389,332	420,904	425,568	419,144	415,420	438,899
South Australia	240,846	237,532	240,987	254,698	259,656	281,040
W. Australia	251,289	257,283	277,021	300,727	302,150	295,300
Tasmania	97,470	101,431	100,232	106,571	109,389	120,962
Commonwealth	2,287,329	2,326,996	2,511,291	2,626,371	2,685,158	2,770,745

26. **Analysis of Gross Revenue and Expenditure of Postal Departments.**—The following tables give an analysis of the gross earnings, and shew the distribution of expenditure in each State and in the Commonwealth, during the year 1906:—

ANALYSIS OF GROSS REVENUE OF POSTAL DEPARTMENT IN EACH STATE AND IN THE COMMONWEALTH, 1906.

Particulars.	N.S.W.	Vict.	Qld.	S. Aus.	W. Aus.	Tas.	C'wlth.
	£	£	£	£	£	£	£
Postage	737,453	503,536	234,594	158,628	135,749	86,318	1,856,278
Telegraphs	186,962	133,536	89,772	94,074	69,678	16,347	590,369
Telephones	144,933	108,437	36,927	30,075	36,239	11,887	368,498
Money order commission	19,767	8,987	6,168	3,424	7,391	3,022	48,759
Poundage on postal notes	15,962	14,842	3,800	2,913	2,888	1,398	41,803
Private boxes and bags	6,888	14,065	2,473	1,129	1,646	566	12,702
Miscellaneous	22,283		8,025	14,733	6,144	2,088	67,338
Total	1,134,248	773,403	381,759	304,976	259,735	121,626	2,985,747

DISTRIBUTION OF EXPENDITURE OF POSTAL DEPARTMENT IN EACH STATE DURING 1906.

Particulars.	N.S.W.	Vic.	Qld.	S. Aus.	W. Aus.	Tas.	C'wlth.
	£	£	£	£	£	£	£
Salaries	500,872	341,446	173,595	145,548	162,660	47,616	1,371,647
Contingencies	142,353	109,057	79,168	45,794	47,923	20,486	444,781
Conveyance of mails*	258,306	157,668	155,335	71,042	64,259	42,290	748,900
Cable subsidies	4,222	8,729	7,503	...	...	4,200	24,654
Telegraph works	14,032	1,476	2,918	494	1,024	144	20,088
Telephone works	26,055	27,221	16,921	10,894	2,823	2,986	86,270
Rent†	8,136	1,831	...	704	641	...	11,312
Repairs and maintenance of buildings†	5,878	3,776	...	1,544	1,065	1,700	13,963
Fittings and furniture†	1,618	403	...	79	256	126	2,482
Sanitation and water supply†	5,026	3,612	...	576	855	132	10,201
New buildings and additions†	...	8,298	...	4,436	...	...	12,734
Miscellaneous	...	131	4,089	19	12,673	1,282	18,194
Pensions	...	4,398	...	...	1,121	...	5,519
Total	966,498	668,046	438,899	281,040	295,300	120,962	2,770,745

* Including ocean mail subsidies. † Under control of Department of Home Affairs.

§ 2. Telegraphs.

1. **First Lines Constructed.**—The electric telegraph was first introduced into Australia for use by the public in the year 1854, when a line from Melbourne to Williamstown was opened. The first line in South Australia, from Adelaide to Port Adelaide, was opened in 1856, while the first line in New South Wales was brought into operation in 1858, when the line from Sydney to Liverpool, 22 miles in length, was opened. In Tasmania the first telegraphic line was completed in 1857, while in the following year communication was established between Sydney, Melbourne, and Adelaide. The first line to be constructed in Queensland was that between Brisbane and Rockhampton, a distance of 396 miles, which was opened in 1864. In Western Australia the first telegraph constructed was from Perth to Fremantle, a distance of twelve miles, which was brought into use in 1869, and in the same year the cable joining Tasmania with the continent of Australia was completed.

2. **Development of Services.**—During the period from 1871 to 1881 great progress was made throughout Australia in the way of telegraphic construction, over 14,000 miles of line, exclusive of railway telegraph lines, being opened for use during the period mentioned, making the total length of the line open at the end of the year 1881, 25,470 miles. In the case of South Australia this increase was to a large extent due to the construction of the transcontinental lines (*a*) from Adelaide to Port Darwin (a distance of 2230 miles), which was completed on the 22nd August, 1872, at a cost of nearly half a million sterling, and (*b*) from Port Augusta to Port Lincoln, and thence along the coast of the Great Australian Bight as far as Eucla, on the Western Australian border. In Queensland there was a large increase resulting from the construction of the line to Normanton, on the Gulf of Carpentaria, while in Western Australia the line from Perth to Albany was extended as far as Eucla on the 9th December, 1877, thus establishing telegraphic communication between the six capital towns, Brisbane, Sydney, Melbourne, Adelaide, Perth, and Hobart. At the present time the systems of telegraph lines throughout Australia are well developed. The longest through line extends from Thursday Island, in Torres Straits, by submarine cable to Paterson, on the mainland of Cape York Peninsula; from Paterson the line runs in a southerly direction as far as Brisbane, where it joins the main interstate line to Sydney, Melbourne, and Adelaide; from Adelaide it runs to Port Augusta, then on to Port Lincoln, on Eyre's Peninsula, and thence to Eucla, on the Western Australian boundary; from Eucla the line extends along the coast of the Great Australian Bight to Albany, and thence it runs adjacent to the west coast of Western Australia as far as Onslow, *via* Perth, Geraldton, and Carnarvon. From Onslow connection extends to Broome, in Roebuck Bay, from which place communication is made to Singapore by the Eastern Extension Company's cable. From Roebuck Bay the line crosses the Kimberley district in an easterly direction, and then runs north as far as the terminus at Wyndham. Branch lines extend to all important coastal and inland towns. In Queensland a line runs to Burketown, near the coast of the Gulf of Carpentaria, *via* Normanton; another line extends to Cloncurry and Urandangi, in the extreme west of the State. New South Wales, Victoria, and the south-eastern parts of South Australia are equipped with a considerable network of lines converging from the country districts towards the more important towns, while from Adelaide the transcontinental line, referred to above, runs in a northerly direction to Port Darwin, from which place communication is provided with Europe by submarine cable by way of Batavia, Singapore, and Madras. In Western Australia a line runs from Eucla to the Coolgardie goldfields *via* Balladonia and Dundas, and from Coolgardie communication is provided with Perth, and with Sir Samuel, in the East Murchison district.

3. **Length of Telegraphic Lines and Wire Open, 1901 to 1906.**—The following table shews the length of telegraph lines and of telegraph wire, exclusive of railway telegraphs, available for use in each State at the end of each year from 1901 to 1906, inclusive :—

LENGTH OF TELEGRAPH LINE AND WIRE, EXCLUSIVE OF RAILWAY TELEGRAPHS, AVAILABLE FOR USE IN EACH STATE, 1901 TO 1906.

State.	1901.	1902.	1903.	1904.	1905.	1906.
LENGTH OF LINE.						
	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
New South Wales	14,272	14,356	14,395	14,491	14,827	15,417
Victoria	3,989	4,001	4,006	3,904	3,913	3,931
Queensland	10,246	10,247	10,180	10,154	10,154	10,198
South Australia	5,763	5,776	6,039	6,071	6,092	6,101
Western Australia	6,173	6,112	6,079	6,199	6,389	6,451
Tasmania	1,500	1,500	1,500	1,539	1,547	1,576
Commonwealth ...	41,943	41,992	42,199	42,358	42,922	43,674
LENGTH OF WIRE.						
New South Wales	46,153	58,907	62,356	67,058	71,086	74,754
Victoria	9,795	9,894	10,161	10,518	10,583	10,663
Queensland	20,537	20,695	20,759	20,764	20,786	20,875
South Australia	13,918	14,021	14,847	15,041	15,353	15,615
Western Australia	9,105	9,105	9,369	9,414	9,637	9,713
Tasmania	2,200	2,200	2,200	2,286	2,294	3,029
Commonwealth ...	101,708	114,822	119,692	125,081	129,739	134,649

4. **Number of Telegraph Offices, 1901 to 1906.**—The following table shews the number of telegraph offices, exclusive of railway telegraph offices, open for use in each State from 1901 to 1906:—

NUMBER OF TELEGRAPH OFFICES OPEN, 1901 TO 1906.

State.	1901.	1902.	1903.	1904.	1905.	1906.
New South Wales	978	983	987	1,005	1,069	1,122
Victoria	446	472	472	482	509	565
Queensland	481	476	481	498	515	536
South Australia	286	287	290	300	299	304
Western Australia	167	167	172	183	188	200
Tasmania	210	204	205	206	207	193
Commonwealth ...	2,568	2,589	2,607	2,674	2,787	2,920

5. **Revenue and Expenditure, 1901 to 1906.**—Particulars as to the revenue from the telegraph systems in each State for the years 1901 to 1906 are given on page 626, while particulars as to the expenditure for the year 1906 are also given on the same page.

6. **Number of Telegrams dealt with, 1901 to 1906.**—The subjoined table shews the number of telegrams despatched in each State for delivery in that State, the number of telegrams despatched in each State for delivery in other States of the Commonwealth and received for delivery in each State from other States, and also the total number of telegrams—exclusive of cablegrams—dealt with in each State. The last set of figures represent the sum of the corresponding figures for each State in the first two sets of figures. The true total for the Commonwealth in the last table, however, is not obtained

by merely adding together the figures for the several States, since interstate telegrams are counted both in the State in which they are despatched and in that in which they are received. A second total is therefore shewn, obtained by subtracting from the first total half the sum of the number of interstate telegrams received and despatched :—

NUMBER OF TELEGRAMS DESPATCHED AND RECEIVED IN EACH STATE, 1901 TO 1906.

State.	1901.	1902.	1903.	1904.	1905.	1906.
INLAND (COUNTED ONCE).						
New South Wales	2,220,622	2,306,484	2,215,823	2,192,757	2,293,656	2,645,749
Victoria ...	1,623,985	1,618,128	1,706,497	1,644,522	1,689,145	1,785,046
Queensland ...	*963,259	*902,780	*1,011,193	*1,012,984	*1,126,774	1,290,431
South Australia ...	517,617	523,762	638,803	686,330	687,010	723,577
Western Australia	912,335	878,469	1,072,774	1,003,335	1,064,710	1,123,579
Tasmania ...	237,634	227,215	282,832	277,831	301,632	310,400
Commonwealth	6,475,452	6,456,838	6,927,922	6,817,759	7,162,927	7,878,782
INTERSTATE, RECEIVED AND DESPATCHED.						
New South Wales	1,124,283	957,591	1,026,722	1,055,044	1,118,322	1,307,398
Victoria ...	760,781	882,750	1,013,126	1,028,030	1,016,116	1,314,722
Queensland ...	*401,745	*438,246	*476,609	*477,663	*514,501	587,752
South Australia ...	365,599	386,088	475,040	491,134	526,596	590,461
Western Australia	282,996	306,279	480,744	525,258	544,937	533,929
Tasmania† ...	*119,491	*134,459	*157,239	164,159	184,970	198,139
Commonwealth	3,054,895	3,105,418	3,629,480	3,741,288	3,905,442	4,532,401
TOTAL DEALT WITH.						
New South Wales	3,344,905	3,264,075	3,242,545	3,247,801	3,411,978	3,953,147
Victoria ...	2,384,766	2,500,878	2,719,623	2,672,552	2,705,261	3,099,768
Queensland ...	*1,365,004	*1,341,026	*1,487,802	*1,490,647	*1,641,275	1,878,183
South Australia ...	883,216	909,850	1,113,843	1,177,464	1,213,606	1,314,038
Western Australia	1,195,331	1,184,748	1,553,518	1,528,593	1,609,647	1,657,508
Tasmania‡ ...	*357,125	*361,674	*440,071	441,990	486,602	508,539
Commonwealth ...	9,530,847	9,562,251	10,557,402	10,559,047	11,068,369	12,411,183
Cwth. (allowing for interstate excess)	8,002,901	8,009,545	8,742,662	8,688,403	9,115,648	10,144,983

* Partly estimated. † Interstate cablegrams. ‡ Including interstate cablegrams.

7. **Rates for Transmission of Telegrams.**—The present rates for the transmission of telegrams within the Commonwealth were fixed by section 7 of the Post and Telegraph Rates Act 1902, and came into force on the 1st November, 1902. Under this Act charges are made for telegrams according to whether they are "ordinary" or "press" telegrams. "Press" telegrams are defined to mean those the text of which consists of political, commercial, etc., information, and of news intended for publication in a newspaper. The telegram must be sent by an authorised correspondent, and must be

addressed to a registered newspaper or recognised news agency. The subjoined tables shew the scales of charges:—

SCALE OF CHARGES FOR ORDINARY TELEGRAMS.

Particulars.	Town and Suburban, within Prescribed Limits, or within 15 Miles from the Sending Station.	Other Places within the State, except Town and Suburban.	Interstate.
	s. d.	s. d.	s. d.
Including address and signature—			
Not exceeding 16 words	0 6	0 9	1 0
Each additional word	0 1	0 1	0 1

Double the foregoing rates are imposed for the transmission of telegrams on Sunday, Christmas Day, and Good Friday, and between the hours of 8 p.m. and 9 a.m., and for telegrams sent on "urgent" forms.

SCALE OF CHARGES FOR PRESS TELEGRAMS.

Particulars.	Within any State.	Interstate.	Relating to Parliamentary, Executive, Departmental and other Commonwealth Proceedings, as may be Prescribed.
	s. d.	s. d.	s. d.
Not exceeding 25 words	0 6	1 0	...
From 25 to 50 words	0 9	1 6	...
From 50 to 100 words	1 6	3 0	...
Every additional 50 words	0 6	1 0	...
Within the Commonwealth.			
Not exceeding 25 words			1 0
From 25 to 100 words			1 6
Every additional 50 words			0 6

§ 3. Submarine Cables.

1. **First Cable Communication with the Old World.**—As far back as 1857 the question of connecting Australia with the old world by means of submarine cables was brought forward in South Australia. No steps, however, were taken in the direction of constructing the cable until the year 1869, when various schemes were proposed. About this time the British Australian Telegraph Company was formed for the purpose of laying a cable to Australia without subsidy or guarantee. Communication had already been provided between London and Singapore *via* Bombay and Madras, and also through Java from Batavia to Banjoewangie. The proposal of the above company was to lay cables from Singapore to Batavia and from Banjoewangie to Port Darwin, from which place connection would be made overland with the Queensland telegraph system at Normanton. It, was, however, subsequently decided that the company's line should end at Port Darwin, the South Australian Government undertaking to construct an overland line from Port Augusta to Port Darwin, a distance of 1971 miles. In November, 1871, the submarine cable was completed, and communication was established between Port Darwin and London. On the 22nd August, 1872, the construction of the line from Port

Darwin to Adelaide was accomplished at an expenditure of nearly £500,000. The cable from Port Darwin is now under the control of the Eastern Extension Telegraph Company.

2. **The Tasmania-Victoria Cable.**—In the meantime the cable joining Tasmania to the continent of Australia had been laid, and was opened for use in 1869, the total length being 170 miles. The cable starts from Flinders, near Cape Schanck, in Victoria, and ends at Low Head, at the mouth of the River Tamar, in Tasmania. The line is owned by the Eastern Extension Telegraph Company, and is subsidised by the Tasmanian Government to the extent of £4200 per annum; the receipts are also guaranteed up to £5600 per annum. Both the subsidy and the guarantee expire in the year 1909. Negotiations for the purchase of this cable by the Commonwealth Postal Department have been in progress for some time, but at the end of the year 1907 no settlement had been arrived at.

3. **The Eastern Extension Company's Cables.**—In addition to the Victoria-Tasmania cable and the original cable from Port Darwin referred to above, the Eastern Extension Company have constructed and have control over several other cables connecting with various places in the Commonwealth. (*a*) In 1879 the original cable *via* Banjoewangie was duplicated, the States of New South Wales, Victoria, South Australia, Western Australia and Tasmania having agreed to pay the above company a subsidy of £32,400 per annum for a period of twenty years, the amount to be divided between the States on a population basis. (*b*) In 1881 a cable was constructed connecting Broome, in Roebuck Bay, W.A., with Banjoewangie; from Broome there is direct telegraphic communication with Perth, from which place communication is made with the Eastern States by the interstate line *via* Albany, Eucla, and Port Augusta. (*c*) In July, 1899, the company offered to lay a cable direct to Great Britain *via* the Cape of Good Hope, and also offered reductions in the rates charged, if the States would agree to certain conditions giving the company the right of direct dealing with the public. The States of South Australia, Western Australia and Tasmania accepted the terms offered, and New South Wales entered into the agreement in January, 1901. The cable was opened *via* Fremantle and Durban in October, 1901. (*d*) Another submarine cable from Fremantle to Adelaide forms an alternative line of communication between the eastern States and Western Australia. (*e*) There is an alternative route, partly belonging to the Eastern Extension Company and connecting the Port Darwin-Singapore cable with London, *via* Hong Kong, Shanghai, Posiett Bay (Pacific Russia), Libau (Russian Baltic), and Newbiggin (England).

4. **The Pacific Cable.**—In July, 1898, a conference of representatives of Great Britain, Canada, New South Wales, Victoria, Queensland, South Australia and New Zealand was held for the purpose of considering a project for a cable to be laid across the Pacific Ocean, touching only British territory on its way from Australia to Canada, thus providing an "All Red" route, as it is termed, for a cable system between England and Australia. In the following year it was agreed at a meeting held by representatives of the countries interested that the cable should be laid and that Great Britain should pay one-third of the cost; Canada, two-ninths; and the States of New South Wales, Victoria, and Queensland the remaining four-ninths. The construction and management of the cable were placed under the control of a Board composed of seven members—two each from Great Britain, Canada, and Australia, and one from New Zealand—called the Pacific Cable Board. The Australian shore-end of the cable was landed at Southport, Queensland, in March, 1902, and the cable was completed and opened for use on the 3rd November, 1902. There are cable-stations at Norfolk Island, Fiji, and Fanning Island, and a branch cable runs from Norfolk Island to New Zealand. The following table shews particulars of the revenue, expenditure, total loss, and the proportion of the loss payable by the Commonwealth for each financial year since the opening of the cable:—

REVENUE, EXPENDITURE, AND LOSS ON WORKING OF PACIFIC CABLE, 1903 TO 1907.

Year ended the 31st March.	Revenue.	Expenditure.	Loss.	Commonwealth Proportion of Loss.
	£	£	£	£
1903 ...	...	...	90,518	30,172
1904 ...	80,118	167,869	87,751	29,250
1905 ...	87,446	163,296	75,849	25,283
1906 ...	91,952	164,508	72,556	24,185
1907 ...	113,516	167,439	54,923	18,307

5. **New Zealand Cables.**—A submarine cable joining New Zealand to the Australian Continent was laid in 1876. The line is 1191 miles in length. The Australian shore-end of the cable is at Botany Bay, while the New Zealand terminus is at Wakapuaka, near Nelson, in the Middle Island, from which place another cable, 109 miles in length, is laid to Wanganui, in the North Island. For a period of ten years after its opening the cable was subsidised by the New South Wales and New Zealand Governments, the total contributions amounting to £10,000 a year. The branch from Norfolk Island to New Zealand of the Pacific cable was opened on the 23rd April, 1902. The length of this cable is 597 miles, the New Zealand terminus being at Doubtless Bay in the north of the North Island.

6. **The New Caledonian Cable.**—In April, 1892, a French company, known as the Compagnie Française des Cables Télégraphiques, entered into an agreement with the French, the New South Wales, and the Queensland Governments to lay down a submarine cable between New Caledonia and Queensland in return for guarantees by the French Government to the extent of £8000, and by the Governments of New South Wales and Queensland to the amount of £2000 each annually for a period of thirty years. The cable was opened for use in October, 1893, the Australian shore-end being at Bundaberg. The Governments of New South Wales and Queensland are entitled to use the cable for the transmission of official messages up to the amount of their guarantees.

7. **Number of Cablegrams Received and Despatched in each State, 1905 and 1906.**—The subjoined table shews the number of cablegrams received and despatched in each State and in the Commonwealth during the years 1905 and 1906. Returns for previous years are not available:—

NUMBER OF CABLEGRAMS RECEIVED AND NUMBER DESPATCHED IN EACH STATE, 1905 AND 1906.

State.	Cablegrams Received.		Cablegrams Despatched.		Total Cablegrams Received & Despatched.	
	1905.	1906.	1905.	1906.	1905.	1906.
New South Wales	81,548	93,256	82,519	96,478	164,067	189,734
Victoria ...	55,749	67,194	59,279	70,315	115,028	137,509
Queensland ...	6,455	7,443	7,961	9,297	14,416	16,740
South Australia...	17,436	16,610	13,084	15,006	30,520	31,616
Western Australia	10,446	9,258	14,504	12,406	24,950	21,664
Tasmania* ...	4,777	5,241	4,915	5,917	9,692	11,158
Commonwealth	176,411	199,002	182,262	209,419	358,673	408,421

* Exclusive of interstate cablegrams, which are classed as interstate telegrams (see above).

The following table shews the total number of cablegrams despatched and received in each State during each year from 1901 to 1906, inclusive:—

NUMBER OF CABLEGRAMS RECEIVED AND DESPATCHED, 1901 TO 1906.

State.	Cablegrams Despatched and Received.					
	1901.	1902.	1903.	1904.	1905.	1906.
New South Wales	104,590	159,081	152,814	144,936	164,067	189,734
Victoria ...	44,824	86,243	100,715	109,635	115,028	137,509
Queensland ...	9,723	8,260	12,749	12,741	14,416	16,740
South Australia ...	29,431	29,172	21,823	29,373	30,520	31,616
Western Australia	30,268	30,318	34,216	25,873	24,950	21,664
Tasmania* ...	†6,289	†7,077	†8,276	18,679	9,692	11,158
Commonwealth	225,125	320,396	330,593	341,237	358,673	408,421

* Exclusive of interstate cablegrams, which are classed as interstate telegrams (see above).
† Partly estimated.

8. **Lengths of Cable Routes.**—The following table gives the lengths of various cable routes:—

LENGTHS OF CABLE ROUTES.

Via Roebuck Bay.	Miles.
Perth to Roebuck Bay ...	1,485
Roebuck Bay to Banjoewangie	970
Banjoewangie to London	9,841
Total	12,296

Via Port Darwin.	Miles.
Adelaide to Port Darwin	2,184
Port Darwin to Banjoewangie	1,150
Banjoewangie to London	9,841
Total	13,125

Via South Africa.	Miles.
Perth to Mauritius ...	4,417
Mauritius to Durban ...	1,786
Durban to Cape Town ...	800
Cape Town to Madeira ...	5,715
Madeira to Penzance ...	1,341
Penzance to London ...	260
Total	14,319

Via Vancouver.	Miles.
Southport (Queensland) to Norfolk Island	963
Norfolk Island to Suva (Fiji)	1,129
Suva to Fanning Island	2,351
Fanning Island to Bamfield (Canada) ...	3,980
Across Canada	3,450
Canada to Ireland	2,450
Total	14,323

Via Russia	Miles.
Sydney to Port Darwin	2,992
Port Darwin to Hong Kong	4,237
Hong Kong to Posiett Bay	2,647
Posiett Bay to Libau	6,399
Libau to Newbiggin (England)	1,657
Total	17,932

9. **Cable Rates.**—In 1872 the cable rate to England was nine guineas for twenty words, but when word rates were brought into general use in 1875, the rate between Great Britain and Australia was fixed at ten shillings and sixpence, subsequently altered to ten shillings and eightpence. This remained the standard rate for eleven years, when the Eastern Extension Telegraph Company reduced it in 1886 to nine shillings and fourpence a word for ordinary messages, to seven shillings and a penny for Government messages, and to two shillings and eightpence a word for press messages. At a conference of the postal and telegraphic authorities held in March, 1891, a proposal to reduce the rates to four shillings a word for ordinary messages, three shillings and eightpence for Government, and one shilling and tenpence for press messages was agreed to, the States of New South Wales, Victoria, South Australia, Western Australia and Tasmania undertaking to make good half the loss which the Eastern Company might suffer through such reductions. The States guaranteed to the company one-half of the amount of receipts short of the

sum of £237,736—the amount received by the company in 1889 in respect of cable charges—the other half to be borne by the company. The Government of South Australia was also guaranteed by the other contracting States against any loss to the revenue which the lower cable rates might cause in the working of the overland lines. Queensland subsequently joined the other States in these guarantees. Owing to various circumstances the cable traffic did not respond to the reductions, and heavy losses were incurred. It was, therefore, decided at a conference held at Melbourne to increase the rates for ordinary messages to four shillings and ninepence per word. The new rates came into force on the 1st January, 1893, concurrently with an agreement under which New Zealand joined the guarantees to the company and to South Australia.

(i.) *Present Rates to Great Britain.* On the acceptance by three of the States of the terms offered by the Eastern Extension Telegraph Company for the construction of a cable *via* South Africa the rate for ordinary messages was reduced in May, 1900, to four shillings a word. It was further reduced to three shillings and sixpence in January, 1901, and to three shillings in January, 1902, at which amount the standard rate by all routes for cablegrams to Great Britain has since remained. The scale of reductions is governed by a revenue standard and when the latter averages £330,000 per annum a further reduction to two shillings and sixpence will be made.

(ii.) *Rates to New Zealand.*—As a result of the completion of the New Zealand branch of the Pacific cable in 1902, the rates charged for cablegrams between Australia and New Zealand, except to and from Tasmania, were uniformly reduced to fourpence-halfpenny per word. Between New Zealand and Tasmania the charge was fixed at fivepence-halfpenny a word, but it has since been reduced to fourpence-halfpenny. The charge for ordinary cablegrams from New Zealand to Great Britain was reduced from the 1st June, 1902, from five shillings and twopence to three shillings and fourpence a word, and has since been further reduced to three shillings a word.

10. **Cable Subsidies Paid by Each State, 1901 to 1906.**—The agreements between the State Governments and the Eastern Extension Telegraph Company expired on the 30th April, 1900. Since the year 1895 the amounts guaranteed—£237,736 to the company and £37,552 to South Australia—have been met by the receipts, and the contracting States have, therefore, not been called upon to contribute.

(*a*) The following table shews the total amounts paid by each State by way of cable subsidies for each calendar year from 1901 to 1906, inclusive:—

TOTAL AMOUNT OF CABLE SUBSIDIES PAID BY EACH STATE, 1901 TO 1906.

State.	1901.	1902.	1903.	1904.	1905.	1906.
	£	£	£	£	£	£
New South Wales	3,494	1,993	12,028	11,613	10,530	4,223
Victoria ...	1,505	...	10,058	10,114	8,430	8,073
Queensland ...	2,519	2,513	11,770	11,984	12,000	8,501
South Australia ...	1,423	...	...	...	...	...
Western Australia	66	22	...	...	...	...
Tasmania ...	4,200	4,200	4,200	4,200	4,200	4,200
Commonwealth ...	13,207	8,728	38,056	37,911	35,160	24,997

(*b*) The subjoined statement shews the amounts paid by each State in respect of each cable service during the year 1906:—

AMOUNTS PAID BY THE SEVERAL STATES IN RESPECT OF EACH SUBSIDISED CABLE SERVICE, 1906.

State.	Tasmania-Victoria.	New Caledonia.	Pacific.	Total.
	£	£	£	£
New South Wales	...	2,000	2,223	4,223
Victoria	...	...	8,073	8,073
Queensland	...	2,000	6,501	8,501
South Australia	...	...	...	...
Western Australia	...	...	...	...
Tasmania...	4,200	...	...	4,200
Commonwealth ...	4,200	4,000	16,797	24,997

As the agreement in connection with the Tasmanian cable expires in 1909, and as there is a probability of the service being taken over by the Commonwealth Government, the guarantees will, in the course of another year, be reduced to those in connection with the New Caledonia cable and with the Pacific cable.

§ 4. Telephones.

1. **Development of Telephone Services.**—The Postal Departments of the several States have established telephone services in all the capital towns and in many of the important centres of population throughout the Commonwealth. For the purpose of bringing the use of the instrument more generally into use, the charges have in recent years been considerably reduced, with the result that the number of subscribers has largely increased. Particulars as to the revenue from telephone services in each State for the years 1901 to 1907 are given on page 626 *ante*, while particulars of the expenditure on telephone works in each State for the year 1907 are given in a subsequent table on the same page.

(i.) *Number of Telephone Exchanges, 1901 to 1906.* The following table shews the number of telephone exchanges in each State at the end of each year from 1901 to 1906, inclusive:—

NUMBER OF TELEPHONE EXCHANGES, 1901 TO 1906.

State.	1901.	1902.	1903.	1904.	1905.	1906.
New South Wales	48	51	57	61	64	76
Victoria ...	20	20	20	22	24	31
Queensland ...	15	15	15	19	19	24
South Australia	12	12	12	11	11	11
Western Australia	12	12	13	13	16	20
Tasmania ...	13	13	16	16	16	16
Commonwealth ...	120	123	133	142	150	178

(ii.) *Number of Telephone Connections.* The subjoined table shews the number of telephone connections to the various exchanges in each State at the end of each year from 1901 to 1906, inclusive:—

NUMBER OF TELEPHONE CONNECTIONS, 1901 TO 1906.

State.	1901.	1902.	1903.	1904.	1905.	1906.
New South Wales ...	9,864	11,079	12,091	13,138	14,224	15,453
Victoria	6,049	6,847	7,610	8,429	9,259	10,424
Queensland	2,978	3,296	3,749	3,936	4,210	4,405
South Australia	1,831	1,983	2,179	2,319	2,503	2,510
Western Australia ...	2,764	2,941	3,332	*3,448	*3,648	3,797
Tasmania	*1,091	1,158	1,236	1,329	1,441	1,563
Commonwealth ...	24,577	27,304	30,197	32,599	35,280	38,152

* Estimated.

(iii.) *Length of Telephone Wire, 1901 to 1906.* The subjoined table shews the length of telephone wire, exclusive of telegraph and railway telephone wire, available for use in each State at the end of each year from 1901 to 1906, inclusive:—

LENGTH OF TELEPHONE WIRE, EXCLUSIVE OF TELEGRAPH AND RAILWAY TELEPHONE WIRE, 1901 TO 1906.

State.	1901.	1902.	1903.	1904.	1905.	1906.
New South Wales ...	15,885	17,727	19,479	20,853	22,111	23,403
Victoria	17,354	20,894	22,577	25,073	28,638	30,984
Queensland	4,360	4,911	5,613	6,309	7,697	9,758
South Australia	3,935	4,244	4,572	4,972	5,384	5,566
Western Australia ...	4,944	4,947	5,431	6,016	6,494	6,957
Tasmania	1,239	1,199	1,300	1,236	1,371	1,502
Commonwealth ...	47,717	53,922	58,972	64,459	71,695	78,170

2. **Telephone Rates.**—On the 31st January, 1907, a uniform toll rate was established throughout the Commonwealth. Subscribers at the time at which this rate was introduced were allowed the option of continuing their subscriptions under the old flat rates, which differed in the several States, or of coming in on the basis of the new rates. The charges made to all new subscribers, or for transferred or extended services, are on the basis of the new rates. The rate charged under the toll system varies according to the population of the area over which the telephone service extends, and also according to whether the person connected subscribes to an exclusive, a two-party, or a three-party service. The following table gives particulars of the rates under the toll system:—

TELEPHONE TOLL SYSTEM.—UNIFORM CHARGES FOR ALL STATES.

In Telephone Networks having a Population of—	Radius of Network with Main Exchange as Centre.	Minimum Annual Charge— For an Exclusive Service.	For each Subscriber or Instrument on a Two-party Service.	For each Subscriber or Instrument on a Three-party Service.
	Miles.	£ s. d.	£ s. d.	£ s. d.
From 1 to 10,000	5	4 0 0	3 0 0	2 10 0
„ 10,001 to 100,000 ...	10	4 10 0	3 7 6	2 15 0
„ 100,001 upwards ...	10	5 0 0	3 15 0	3 0 0

For the foregoing charges the Postal Department provides and maintains all necessary exchange equipment, subscribers' lines not exceeding one mile in length radially, one telephone wall-set for each subscriber, and allows 1000 effective calls to be originated by each subscriber in each half-year.

(i.) *Charges for Extra Calls.* For all effective calls beyond 1000 half-yearly the subscriber is charged as follows:—

For calls above 1000 and not exceeding 2000 half-yearly, two calls for one penny.
For calls above 2000 and not exceeding 3000 half-yearly, three calls for one penny.
For calls above 3000 calls half-yealy, four calls for one penny.

(ii.) *Charges for Extra Mileage.* When the radial length of any line exceeds one mile the following charges are made :—

—	Exclusive Services.	Two-party Services.	Three or More Party Services.
For each half-mile or part thereof	£1 per annum	Ten shillings per annum per subscriber or instrument	Five shillings per annum per subscriber or instrument

3. **Miscellaneous Particulars, 1906.** The following table gives various interesting particulars of the operation of the telephone services in each State for the year 1906 :—

PARTICULARS OF OPERATION OF TELEPHONE SERVICES, 1906.

Particulars.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Commonwealth.
Telephone Exchanges ... No.	76	31	24	11	20	16	178
Public Telephone Bureaux No.	463	128	97	49	41	190	968
Extension Lines—							
Metropolitan ... No.	3,050	1,001	2,098	1,025	986	78	—
Country ... ... No.	347		1,894	41	300	43	—
Total ... ... No.	3,397	1,001	3,992	1,066	1,286	121	10,863
Private Lines—							
Metropolitan ... No.	310	208	45	307	30	22	922
Country ... ... No.	569	209	188	129	20	47	1,162
Total ... ... No.	879	417	233	436	50	69	2,084
Connections—							
Central Exchange ... No.	4,663	4,742	*2,043	*1,882	1,562	791	15,481
Suburban Exchanges No.	8,007	4,041	*265	*440	948	28	13,705
Country Exchanges No.	2,783	1,641	*2,097	*188	1,287	744	8,548
Total ... ... No.	15,453	10,424	4,405	2,510	3,797	1,563	38,152
Telephones in use ... No.	20.373	15,460	5,545	3,524	5,093	1,916	51,911
Rental received ... £	144,933	92,385	27,932	28,584	36,063	9,203	339,100
Length of wire opened during year ... ...miles	1,292	2,346	2,061	182	463	131	6,475
Total length of wire at end of year ... ...miles	23,403	30,984	9,758	5,566	6,957	1,502	78,170
Cost of construction during year ... ... £	26,055	45,458	17,850	10,894	8,521	2,986	111,764
Total cost to end o year £	564,979	592,521	170,937	141,118	151,283	44,539	1,665,377

* Partly estimated.

SECTION XIX.

COMMONWEALTH FINANCE.

§ 1. General.

1. **Financial Provisions of the Constitution.**—The main provisions of the Constitution relating to the initiation and development of the financial system of the Commonwealth are those contained in Chapter iv., "Finance and Trade," being sections 81 to 105 of the Constitution Act. (See pp. 32 to 35 herein.) Two other sections which have a most important bearing on questions of Commonwealth finance are sections 69 and 51.

2. **Departments Transferred or Transferable under Constitution.**—In section 69 (pp. 30 and 27 and 28 respectively) it is provided that the Departments of Customs and Excise in each State should become transferred to the Commonwealth on its establishment, and that on a date or dates to be proclaimed by the Governor-General after the establishment of the Commonwealth the following departments should become transferred:—

(i.) Posts, telegraphs, and telephones.
(ii.) Naval and military defence.
(iii.) Lighthouses, lightships, beacons and buoys.
(iv.) Quarantine.

Under proclamation dated 12th February, 1901, and published in the Commonwealth *Gazette* of the 14th of that month, the Departments of Posts, Telegraphs, and Telephones in each State became transferred to the Commonwealth as from the 1st March, 1901, while under a similar proclamation dated 19th February, 1901, and gazetted on the 20th, the Departments of Naval and Military Defence in each State also became transferred to the Commonwealth as from 1st March, 1901.

As the requisite proclamation of transfer has not yet been made in the case of departments dealing with "Lighthouses, light-ships, beacons, and buoys," nor in the case of those concerned in matters of "quarantine," these departments still remain under State control.

3. **Departments Transferable by Means of Commonwealth Legislation.**—In addition to the departments here mentioned which pass to the Commonwealth either automatically or by proclamation, there are several others whose duties the Commonwealth is empowered to undertake after the passing by the Commonwealth of the legislation necessary to authorise the assumption of such duties. These are referred to in section 51 of the Constitution, which contains a statement of all matters respecting which power is (subject to the Constitution) conferred on Parliament "to make laws for the peace, order and good government of the Commonwealth." The matters contained in this section include those already mentioned as being covered by section 69. The principal

matters involving for the due performance of the duties connected therewith the creation or transfer of departments of the Public Service are:--

(i.) Trade and commerce.
(ii.) Taxation.
(iii.) Bounties on production or export of goods.
(iv.) Postal, telegraphic, telephonic, and other like services.
(v.) Naval and military defence.
(vi.) Lighthouses, lightships, beacons and buoys.
(vii.) Astronomical and meteorological.
(viii.) Quarantine.
(ix.) Census and statistics.
(x.) Bankruptcy and insolvency.
(xi.) Copyrights, patents and trade marks.
(xii.) Naturalisation and aliens.
(xiii.) Marriage.
(xiv.) Divorce and matrimonial causes.
(xv.) Invalid and old-age pensions.
(xvi.) Immigration and emigration.
(xvii.) Conciliation and arbitration.

4. **Commonwealth Departments.**--As a result of legislation passed from time to time in accordance with section 51, various departments and sub-departments have been transferred from the States to the Commonwealth, whilst other departments necessary for the due performance of the Commonwealth functions have been brought into existence. In the former class are such departments as those of Patents, Trade Marks, Copyrights, Designs, Naturalisation and Meteorology, while in the latter are the Ministerial Departments of External Affairs, Home Affairs, Treasury, Trade and Customs, Defence, Attorney-General and Postmaster-General, as well as such general departments as Treasury, Audit, Crown Law Department and Census and Statistics. It may, therefore, be said that so far as its financial aspect is concerned, the effect of Federation up to the present time has been the transfer from States to Commonwealth of the revenue obtainable from the great revenue-producing Departments of Customs and Excise, and of the expenditure connected with various departments whose number is gradually increasing, and that, in addition, the various functions of the Commonwealth have necessitated further new expenditure.

5. **Adjustment of Accounts between Commonwealth and States.**—The fact that the Departments of Customs and Excise were those responsible in the several States for the production of a very large proportion of their total revenues, and that the financial relief afforded to the States by means of the transfer of expenditure to the Commonwealth would not, at least initially, be at all commensurate with this transfer of revenue, naturally led to the inclusion in the Constitution of a provision for the repayment to the States of surplus Commonwealth revenue. The means to be adopted for securing an equitable allocation of such repayment amongst the several States received very extensive consideration at the several conventions at which the framing of the Constitution took place, and the basis ultimately agreed upon was that involving for at least ten years after the establishment of the Commonwealth the provisions of what is generally known as the Braddon clause (section 87) and for at least five years after the imposition of uniform duties of Customs, the scheme of allocation which has become known as the "*book-keeping system.*" (Sections 89 and 93.)

6. **The "Braddon" Clause.**—This clause (section 87 of the Constitution) is so called after Sir Edward Braddon, a Tasmanian delegate to the Federal Convention of 1897 and 1898, by whom it was introduced. In its original form the clause provided that for all time the Commonwealth should return to the States not less than three-fourths of the net revenue of the Commonwealth from duties of Customs and Excise, not prescribing,

however, what should be returned to *each* State. At the Melbourne session of the Federal Convention, held in 1898, provision was made that surplus revenue, instead of being returned to a State, might be applied towards the payment of interest on debts of that State taken over by the Commonwealth, and at the Premiers' Conference, held in Melbourne in 1899, a further amendment of the clause was effected by limiting its operations to a "period of ten years after the establishment of the Commonwealth, and thereafter until Parliament otherwise provides." The provisions of this clause *per se* are complied with, so it would appear, if the total amount returned to the States as a whole is not less than three-fourths of the total net revenue from Customs and Excise, and that the Commonwealth is not under an obligation to return to each State three-fourths of the net Customs and Excise revenue collected in respect thereof. Thus, since the establishment of Federation, although the total amount of surplus Commonwealth revenue distributed amongst the States has in every year largely exceeded three-fourths of the total net revenue from Customs and Excise, the amount paid to one of the States, viz., Queensland, has in several of these years fallen short of three-fourths of the net Customs and Excise revenue collected in respect of that State.[1] This occurred in the years 1901-2, 1903-4, and 1904-5, and was due in large measure to the heavy expense involved in working the Commonwealth departments in that State.

7. **The "Book-keeping System."**—The scheme set forth in the Constitution for determining the amount to be paid to the several States is contained in sections 89 and 93 (see pp. 33 and 34 herein), the former of which relates to the period prior to the imposition of uniform duties of Customs, the latter to the first five years after the imposition of such duties, and thereafter until Parliament otherwise provides. The principle involved in this scheme is that of crediting each State with the Commonwealth revenue collected in respect of that State, and of debiting it with the expenditure incurred on its behalf in connection with transferred departments, as well as its share on a *per capita* basis of the new expenditure of the Commonwealth. On this account the method of allocation provided by the Constitution has become very generally known as the "*book-keeping system.*" As the imposition of uniform duties of Customs and Excise took place throughout the Commonwealth on 9th October, 1901, the five years provided for in section 93 expired on 8th October, 1906, and consequently the "*book-keeping system*," which is still in force, may be changed at any time by the Commonwealth Parliament. In section 93 provision is made that the duties chargeable on goods imported into one State and consumed in another should be credited to the consuming State, the evident intention being that of safeguarding the interests of such States by allowing to each the revenue which its citizens actually contribute, since presumably the duty ultimately falls upon the consumer. The balance in favour of any State is paid monthly by the Commonwealth.

8. **Western Australian Sliding Scale.**—Owing to the exceptional circumstances of Western Australia, and the fact that the immediate introduction of interstate freetrade would seriously interfere with the development of the State, through the diminution in the funds at the disposal of its Treasurer, provision was made in section 95 (page 34 herein) for the retention of interstate duties by Western Australia during the five years after the imposition of uniform duties, such duties to be collected by the Commonwealth. It was stipulated that during the first of these years the duty so imposed on any goods should not exceed the duty chargeable on the goods under the law of Western Australia in force at the imposition of uniform duties, and that during the succeeding years the amount imposed should not exceed four-fifths, three-fifths, two-fifths, and one-fifth respectively, and should cease at the expiration of the fifth year. This special concession to Western Australia, known as the "*Western Australian special tariff*," came to an end on 8th October, 1906, since when trade between all the States has been free. The amount collected under this special tariff during the five years of its operation from 9th October, 1901, to 8th October, 1906, was as follows:—

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[1] See report of Treasurers' Conference, 5th to 12th February, 1904, pp. 3 *et seq.*

DUTY COLLECTED UNDER W.A. SPECIAL TARIFF, 1901-2 TO 1906-7.

Year	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.	Total.
Amount ... £	201,569	233,467	196,936	142,549	77,666	16,776	868,963

9. **Special Assistance.**—A clause (section 96 of the Constitution) which has a very important bearing on the financial relations of the States and the Commonwealth was inserted by the Premiers' Conference of 1899. This clause provides that the Commonwealth Parliament may grant financial assistance to any State on such terms and conditions as the Parliament thinks fit. It is said to have been introduced with the object of rendering the Constitution more elastic in the matter of aid to the States than would be possible if the Braddon clause and the book-keeping system were rigidly adhered to. No claim for such special assistance has yet been made on the part of any of the States, although it appears that the framers of the clause anticipated that it might be required during the early years of Federation.

10. **Transfer and Consolidation of State Debts.**—Under section 105 of the Constitution power is given to the Commonwealth Parliament to take over from the States either the whole of the public debts of the States as existing at the establishment of the Commonwealth, or a proportion of that debt calculated on a population basis, and to defray the interest payable in respect of such debts from the portions of the surplus revenue of the Commonwealth payable to the several States. The prospective savings in the matter of interest to be effected by means of the consolidation of the State debts formed a strong argument in pre-federal days for those supporting the federal movement. Since the establishment of the Commonwealth, however, the individual States do not appear to have become willing to accept a Commonwealth control of State indebtedness.

11. **Disadvantages of the Present System.**—Under the book-keeping system of regulating the financial relations of the States and Commonwealth an endeavour is made to distribute the surplus revenue in the exact proportion in which it has been contributed by the several States. If these be regarded as States which have merely transferred some of their ordinary functions to the Commonwealth, the crediting each with the revenue received in respect to itself, and debiting it with the expenditure which the administration of Commonwealth affairs on its behalf has occasioned, might be deemed to be as equitable as any method that could be suggested. There are, however, certain practical objections to such a system, which may be summarised as follows :—

(i.) The trouble and expense which the necessary record entails.

(ii.) The practical impossibility of ensuring that in every case a consuming State will be duly credited with revenue collected on its behalf in a distributing State.

(iii.) The difficulty involved in equitably determining the amount to be debited to the several States in respect of general Commonwealth expenses.

(iv.) The uncertainty on the part of the State Governments as to the amount which will become available.

(v.) The impossibility of securing independent State and Commonwealth finance.

12. **Proposals to modify present System.**—Various proposals have from time to time been made for modifying the present "book-keeping" system in such a manner as to obviate certain of the disadvantages inherent therein. The principal of these proposals are those which may be classified under the following heads :—

(i.) A *per capita* distribution of surplus.

(ii.) Payment of a fixed annual sum.

(iii.) Payment of a fixed annual amount per head.

(iv.) Increase in liability transferred to Commonwealth.

Some of the proposals that have been made involve features of more than one of the systems here specified, and in certain cases combine them with those of the book-keeping system. A dissertation on the merits and demerits of any of the proposals would be beyond the scope of the present publication, but it may be noted that the scheme put forward by Sir George Turner when Commonwealth Treasurer was based on an increase in the liability transferred to the Commonwealth, while that of Sir John Forrest, presented with his budget of 1906-7, was based on the payment of a fixed annual sum.

13. **Interstate Conferences.**—Since the establishment of the Commonwealth, conferences of State Ministers have been held from time to time, at which proposals for adjusting the financial relations between the States and the Commonwealth have been considered. At the conference held in Melbourne in October, 1906, and that held in Brisbane in May, 1907, the scheme put forward by Sir John Forrest was very fully discussed, and in so far as the proposals for the allocation of surplus Commonwealth revenue are concerned was, with some minor amendments, agreed to. The proposals made by Sir John Forrest for the transfer of State debts did not, however, meet with the approval of the conferences. Since the retirement of Sir John Forrest from the Commonwealth Ministry the scheme has been practically shelved, and no proposal has been made public to change the present method of working under the provisions of the Braddon clause and the book-keeping system.

§ 2. Consolidated Revenue Fund.

(A) Nature of Fund.

The provisions made for the formation of a Commonwealth Consolidated Revenue Fund, and the means to be adopted for operating on that fund, are contained in sections 81, 82 and 83 of the Constitution (page 32 herein). In section 81 it is provided that "All revenues or moneys raised or received by the Executive Government of the Commonwealth shall form one Consolidated Revenue Fund, to be appropriated for the purposes of the Commonwealth in the manner and subject to the charges and liabilities imposed by this Constitution." A strictly literal interpretation of this section would appear to require all loan and trust moneys received by the Commonwealth Executive to be paid to Consolidated Revenue. It is, however, held by Quick and Garran, in their "Annotated Constitution," that the "generic word *moneys* must be controlled by the preceding specific word *revenues*, and limited to moneys in the nature of revenue." This is the view of the matter which has been adopted by the Commonwealth Treasury in the preparation of its accounts. At present the Commonwealth has no Loan Account, but certain moneys received, which are not of the nature of revenue, are paid to Trust Account. As regards expenditure from the Consolidated Revenue Fund, section 82 provides that the costs, charges, and expenses incident to the collection, management and receipt of the Consolidated Revenue Fund should form the first charge thereon, while section 83 stipulates that "no money shall be drawn from the Treasury of the Commonwealth except under appropriation made by law." Such appropriations are either special, and as such are provided for by means of a permanent Act, or are annual, and provided for in an annual Appropriation Act.

(B) Revenue.

1. **Total Collections.**—Particulars concerning the total amount of revenue collected by the Commonwealth Government and credited to the several States from 1st January, 1901, to 30th June, 1907, are contained in the following table:—

CONSOLIDATED REVENUE OF THE COMMONWEALTH, 1901 TO 1906-7.

State to which Credited.	Half-year to 30th June, 1901.	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.
	£	£	£	£	£	£	£
New South Wales ...	1,296,963	3,694,266	4,391,020	4,166,289	4,021,310	4,314,829	4,782,122
Victoria	1,536,810	2,976,500	3,127,120	3,102,452	3,181,897	3,292,885	3,537,602
Queensland	806,717	1,611,502	1,563,791	1,458,287	1,430,755	1,550,360	1,707,136
South Australia ...	443,050	978,008	946,707	963,103	953,608	987,792	1,113,450
Western Australia ...	559,108	1,561,538	1,621,962	1,493,696	1,431,624	1,287,103	1,216,416
Tasmania	253,108	475,081	456,337	447,171	446,404	448,955	476,165
Commonwealth ...	4,895,756	11,296,985	12,105,937	11,630,998	11,465,598	11,881,924	12,832,891

The revenue collected by the Commonwealth during the financial year 1906-7 was, in all the States except Western Australia, higher than in any preceding year. In the case of Western Australia the year in which the maximum collection of Commonwealth revenue took place was 1902-3, a continuous decline having been since experienced.

2. **Collections per Head.**—In the table given hereunder particulars are furnished of the amount of Commonwealth revenue per head of population collected in respect of each State since the establishment of the Commonwealth:—

COMMONWEALTH REVENUE PER HEAD OF POPULATION, 1901 TO 1906-7.

State to which Credited.	Half-Year to 30th June, 1901.			1901-2.			1902-3.			1903-4.			1904-5.			1905-6.			1906-7.		
	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
New South Wales ...	0	19	2	2	13	9	3	2	7	2	18	5	2	15	2	2	17	10	3	2	8
Victoria	1	5	7	2	9	2	2	11	8	2	11	4	2	12	7	2	14	1	2	17	5
Queensland ...	1	12	5	3	3	8	3	1	3	2	16	7	2	14	10	2	18	9	3	3	10
South Australia ...	1	4	5	2	13	6	2	11	8	2	12	3	2	11	2	2	12	3	2	18	0
Western Australia ...	3	0	9	8	0	11	7	12	1	6	11	8	5	18	2	5	1	0	4	12	11
Tasmania ...	1	9	4	2	14	6	2	11	4	2	9	10	2	9	7	2	9	7	2	12	10
Commonwealth ...	1	5	11	2	19	1	3	2	4	2	19	3	2	17	11	2	18	8	3	2	4

It is remarkable that the revenue per head for the Commonwealth, and also that for New South Wales, were practically identical for the years 1902-3 and 1906-7, and were also sensibly the same for those years (about £3 2s. 6d.). It will also be noticed that for the past five years the Commonwealth revenue per head has differed very slightly from that of New South Wales.

In New South Wales, Victoria, and Queensland the Commonwealth revenue per head of population was higher for 1906-7 than for any previous year, while in the case of Tasmania the revenue per head was lower in 1906-7 than in 1901-2, but higher than in any other year under Federation. In Western Australia, owing in part to the special circumstances of that State as regards its general conditions, and also in part to the provision made under section 95 of the Constitution permitting the imposition in Western Australia of interstate Customs duties on a sliding scale, the revenue per head in 1901-2 reached the abnormal sum of £8 0s. 11d., or nearly three times the Commonwealth average for the year. A continuous and rapid decline has since been in evidence, but notwithstanding this the revenue per head for 1906-7 was £4 12s. 11d., or nearly 50 per cent. more than the average for the Commonwealth. For 1906-7 three of the States (New South Wales, Queensland, and Western Australia) exceeded the Commonwealth average per head, the other three falling short of it.

3. Proportions Collected in respect of the several States.—In the following table particulars are given of the percentage which each State's contribution for the several years was of the total Commonwealth revenue:—

PROPORTION OF REVENUE COLLECTED IN RESPECT OF EACH STATE.

1901 TO 1906-7.

State.	Half-year to 30th June, 1901.	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.
	%	%	%	%	%	%	%
New South Wales ...	26.49	32.70	36.27	35.82	35.07	36.31	37.26
Victoria	31.39	26.35	25.83	26.67	27.75	27.71	27.57
Queensland... ...	16.48	14.26	12.92	12.54	12.48	13.05	13.30
South Australia ...	9.05	8.66	7.82	8.28	8.32	8.32	8.68
Western Australia ...	11.42	13.82	13.40	12.84	12.49	10.83	9.48
Tasmania	5.17	4.21	3.76	3.85	3.89	3.78	3.71
Commonwealth ...	100.00	100.00	100.00	100.00	100.00	100.00	100.00

A comparison of the percentages for 1906-7 with those for 1901-2 reveals the fact that, whilst the proportion of the Commonwealth revenue contributed by New South Wales has during the five years increased considerably, and that contributed by Victoria has increased moderately, the South Australian figures for the two periods are practically identical, and those for Western Australia, Queensland, and Tasmania exhibit decreases, the extent of the decrease being most marked in the case of Western Australia, where a fall in percentage took place from 13.82 in 1901-2 to 9.48 in 1906-7. This rapid decline in Western Australia is due to a variety of causes, the three most important being:—(i.) The abolition of interstate duties, (ii.) the increase in interstate trade, and (iii.) the gradual tendency to equalisation of conditions with those existing in the eastern States.

In view of the various proposals for adjusting the financial relations of the Commonwealth and the States on a *per capita* basis, a comparison of the proportion of Commonwealth revenue collected in respect of each State with that State's proportion of the total Commonwealth population is of considerable interest:—

COMPARISON OF REVENUE AND POPULATION PROPORTIONS, 1906-7.

Particulars.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Cwlth.
	%	%	%	%	%	%	%
Percentage on Commonwealth revenue	37.26	27.57	13.30	8.68	9.48	3.71	100.00
,, ,, ,, population	37.06	29.91	12.99	9.32	6.35	4.37	100.00

In the case of New South Wales, Queensland, and Western Australia the revenue percentage is higher than the population percentage, while in Victoria, South Australia, and Tasmania the population percentage is the higher. The most extensive divergence occurs in the case of Western Australia.

4. Details of Revenue, 1906-7.—The principal revenue-producing departments of the Commonwealth are the Customs, Excise, and Postal, the Customs collections for 1906-7 representing nearly 60 per cent. of the total revenue, Excise about 15½ per cent., and Postal nearly 24 per cent. Details of the Commonwealth revenue collected in respect of each State for the year 1906-7 are given in the following table:—

COMMONWEALTH REVENUE, 1906-7.

Source of Revenue.	Revenue Collected in respect of—						Total Revenue Collected by C'wealth Govt.
	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tasmania.	
	£	£	£	£	£	£	£
Customs ...	2,845,786	2,129,548	999,088	614,337	794,089	278,026	7,660,874
Excise ...	727,527	589,883	278,826	167,489	158,528	65,429	1,987,682
Postal ...	1,191,489	797,972	422,346	327,269	259,688	129,810	3,128,574
Defence ...	844	2,696	851	255	164	302	5,112
Patents ...	4,976	4,702	2,908	1,772	1,997	1,662	18,017
Trade Marks, Copyrights and Designs	2,305	1,896	855	594	437	303	6,390
New revenue...	4,642	3,748	1,628	1,168	796	547	12,529
Miscellaneous	4,553	7,157	634	566	717	86	3,713
Total ...	4,782,122	3,537,602	1,707,136	1,113,450	1,216,416	476,165	12,832,891

5. **Sources of Revenue.**—The following table furnishes particulars concerning the Commonwealth revenue derived from each source since the establishment of federation :—

SOURCES OF COMMONWEALTH REVENUE, 1901 TO 1906-7 :—

Sources of Revenue.	Half-year to 30th June, 1901.	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.
	£	£	£	£	£	£	£
Customs	3,602,194	7,669,970	8,213,448	7,577,734	6,992,592	7,089,379	7,660,874
Excise	548,396	1,224,349	1,471,607	1,528,024	1,806,938	1,910,106	1,987,682
Postal	740,665	2,372,861	2,404,730	2,510,203	2,632,551	2,824,348	3,128,574
Defence	3,304	10,657	9,329	3,885	7,465	8,106	5,112
Patents	—	—	—	—	10,559	23,936	18,017
Trade Marks, Copyrights and Designs	—	—	—	—	—	—	6,390
New Revenue ...	25	2,775	4,710	5,100	7,355	11,854	12,529
Miscellaneous ...	1,173	16,373	2,113	6,052	8,138	14,196	13,718
Total	4,895,756	11,296,985	12,105,937	11,630,998	11,465,598	11,881,925	12,832,891

The maximum annual collection of Customs revenue during the period was the total of £8,213,448 obtained during the financial year 1902-3. The Customs revenue for 1906-7 was practically identical with that for 1901-2. The minimum annual collection was £6,992,592 in 1904-5. In the case of Excise and Postal revenue the amounts collected have increased continuously from year to year, the Excise revenue for 1906-7 exceeding that for 1901-2 by no less than 62 per cent., while the 1906-7 Postal revenue shewed an advance of 32 per cent. on that for 1901-2.

6. **Customs.**—As already noted, several of the provisions of the Constitution have been made dependent for their date of commencement on the imposition of uniform duties of Customs. Thus the book-keeping system and the Western Australian special tariff provisions both hinged upon the date on which the uniform duties of Customs were imposed. The Bill to provide for the collection of such duties was introduced in the Commonwealth House of Representatives on 9th October, 1901, and, in accordance with the usual practice, a resolution to protect the revenue and provide for the collection forthwith of the duties specified in the Bill, was duly carried. This date, 9th October, 1901, is consequently that on which the uniform duties of Customs are considered as having been imposed. A reference to the various enactments of the Commonwealth Legislature relative to the imposition of Customs duties will be found in Section XV., "Commerce." pages 494 to 496.

7. **Customs Revenue, 1906-7.**—The Customs revenue, after deduction of drawbacks and refunds, collected in respect of the several States during the year 1906-7, is given hereunder, details being furnished for the principal classes of dutiable articles imported :—

COMMONWEALTH CUSTOMS REVENUE, 1906-7.

Classes.	Customs Revenue Collected in respect of—						Total for Common-wealth.
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	
	£	£	£	£	£	£	£
Stimulants	862,494	567,743	330,855	138,254	253,949	70,136	2,223,431
Narcotics	332,029	260,550	134,807	64,937	105,485	43,529	941,337
Sugar	37,844	86,933	4,302	5,611	3,510	5,630	143,830
Agricultural products	261,982	177,084	110,476	53,466	109,707	25,897	738,612
Apparel and textiles ...	603,083	465,684	177,124	150,674	121,991	59,858	1,578,414
Metals and machinery	227,578	138,302	97,091	64,346	73,950	23,960	625,227
Oils, paints, etc. ...	50,887	43,629	16,572	12,841	12,718	4,657	141,314
Earthenware, etc. ...	65,572	49,931	17,191	13,963	17,160	6,515	170,332
Drugs and chemicals ...	21,837	15,628	8,246	4,718	7,522	2,414	60,365
Wood, wicker, & cane	71,417	92,298	8,519	23,554	18,456	5,189	219,433
Jewellery, etc. ...	83,228	59,372	27,706	18,454	14,091	7,967	210,818
Leather, etc. ...	64,692	43,367	20,087	16,713	21,488	6,112	172,459
Paper and stationery ...	54,665	44,668	15,078	13,924	11,501	5,405	145,241
Vehicles	38,116	31,945	7,728	14,644	5,160	4,189	101,782
Musical instruments ...	21,563	19,641	7,264	6,280	3,632	1,737	60,117
Miscellaneous articles	38,621	25,853	11,544	8,989	9,505	2,891	97,403
Other receipts ...	10,178	6,920	4,498	2,969	4,254	1,940	30,759
Total Customs...	2,845,786	2,129,548	999,088	614,337	794,089	278,026	7,660,874

The figures given in the above table represent the net amount of Customs revenue credited to each State, after adjustment has been made in accordance with section 93 of the Constitution in respect of duties collected in one State on goods subsequently passing for consumption into another State.

8. **Customs Revenue for Past Five Years.**—Corresponding particulars for the Commonwealth as a whole, for the five years 1902-3 to 1906-7, are furnished in the following table :—

COMMONWEALTH CUSTOMS REVENUE, 1902-3 TO 1906-7.

Classes.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.
	£	£	£	£	£
Stimulants	2,113,138	2,080,677	2,057,431	2,098,712	2,223,431
Narcotics	923,990	965,202	922,548	945,286	941,337
Sugar	519,451	500,763	192,385	129,692	143,830
Agricultural products ...	1,570,723	1,082,110	782,705	812,596	738,612
Apparel and textiles ...	1,275,322	1,240,230	1,354,476	1,416,977	1,578,414
Metals and machinery ...	598,107	489,086	464,683	482,427	625,227
Oils, paints, etc.	114,873	126,436	121,794	124,157	141,314
Earthenware, etc.	155,224	150,238	138,855	150,724	170,332
Drugs and chemicals ...	58,420	61,415	59,838	57,652	60,365
Wood, wicker, and cane ...	192,835	202,466	204,686	187,482	219,433
Jewellery, etc.	164,433	162,163	168,238	173,428	210,818
Leather, etc.	177,870	163,275	162,228	154,038	172,459
Paper and stationery ...	108,012	106,230	108,184	112,052	145,241
Vehicles	65,273	72,380	81,648	77,590	101,782
Musical instruments ...	41,504	46,827	47,712	50,672	60,117
Miscellaneous articles ...	78,542	81,173	85,624	80,112	97,403
Other receipts	55,731	47,063	39,557	35,782	30,759
Total Customs ...	8,213,448	7,577,734	6,992,592	7,089,379	7,660,874

It will be seen that throughout the period here dealt with the Customs revenue from stimulants and narcotics has represented, approximately, 40 per cent. of the total Customs revenue. The other principal dutiable articles are "apparel and textiles," "agricultural products," and "metals and machinery." The most marked increase in the amount of duty collected is in the class of "apparel and textiles," the revenue under this head for 1906-7 exceeding that for 1902-3 by £303,092. The most marked decreases took place in the case of "agricultural products" and "sugar," the former declining during the period by £832,111 and the latter by £375,621. These decreases are to a large extent due to the fact that the figures for 1902-3 were somewhat abnormal owing to the extraordinary importations of these commodities necessitated by the drought of 1902.

9. **Excise.**—The commodities on which Excise duties are levied are beer, spirits, starch, sugar, and tobacco, whilst the department also obtains a small revenue from the granting of licenses for the manufacture of stimulants and narcotics.

The revenue collected in respect of each State during 1906-7, under each of these heads, is shewn in the following table:—

COMMONWEALTH EXCISE REVENUE, 1906-7

Particulars.	Excise Revenue Collected in respect of—						Total for Commonwealth.
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	
	£	£	£	£	£	£	£
Beer	162,953	173,928	62,829	35,646	59,192	18,925	513,473
Spirits	92,150	94,624	52,240	32,615	9,785	3,881	285,295
Starch	9,460	9,943	3,242	2,062	1,708	906	27,321
Sugar	211,625	138,982	83,826	50,564	37,109	24,484	546,590
Tobacco	248,771	169,863	73,820	45,522	49,901	17,083	604,960
Licenses	2,568	2,543	2,869	1,080	833	150	10,043
Total Excise ...	727,527	589,883	278,826	167,489	158,528	65,429	1,987,682

Of the total Excise revenue collected, beer, spirits, and tobacco were responsible for rather more than 70 per cent. The figures given in this table are those obtained after deducting drawbacks and refunds and making the necessary adjustments between the States in connection with goods produced or manufactured in one State and consumed in another.

10. **Excise Collections, 1901 to 1906-7.**—Particulars concerning the amount of Excise collected under each head from the inauguration of Federation to 30th June, 1907, are given hereunder:—

COMMONWEALTH EXCISE REVENUE, 1901 TO 1906-7.

Particulars.	Half-Year to 30th June, 1901.	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.
	£	£	£	£	£	£	£
Beer	83,120	519,790	500,464	483,351	491,492	502,399	513,473
Spirits ...	4,742	198,055	225,712	249,717	262,035	276,516	285,295
Starch ...	...	1,766	18,937	21,206	22,471	24,597	27,321
Sugar ...	...	189,545	261,517	272,117	503,627	536,079	546,590
Tobacco ...	110,374	304,954	453,171	491,434	516,761	560,409	604,960
Licenses ...	760	10,239	11,806	10,199	10,552	10,106	10,043
Total Excise...	198,996	1,224,349	1,471,607	1,528,024	1,806,938	1,910,106	1,987,682

Comparing the Excise collections for 1906-7 with those for 1901-2 it will be seen that whilst the revenue obtained from spirits, starch, sugar, and tobacco increased rapidly during the period, that derived from beer and from licenses was practically the same in 1906-7 as in 1901-2.

11. **Commonwealth Taxation.**—Under section 51, sub-section (ii.) of the Constitution, power is given to the Commonwealth Parliament to make laws with respect to taxation, but so as not to discriminate between States or parts of States. Section 90 of the Constitution makes the power of the Commonwealth Parliament to impose Customs and Excise duties an exclusive one, but it would appear that as regards all other forms of taxation the States and Commonwealth possess concurrent powers. The question of the imposition by the Commonwealth Parliament of direct taxes such as land and income taxes is one which has recently been the subject of considerable discussion, and the opinion has been expressed that the intention of the framers of the Constitution was that of restricting the taxation powers of the Commonwealth to the imposition of Customs and Excise duties except in cases of great national peril. Whatever the intention of the framers may have been in this matter, the Constitution itself contains no such provision, and the Commonwealth Parliament is given an absolutely free hand in the imposition of taxation. Up to the present time the only taxes so levied have been those of Customs and Excise, referred to in detail in the foregoing paragraphs. The total amount obtained from these two sources in respect of each of the States since the inauguration of Federation are given hereunder :—

COMMONWEALTH TAXATION, 1901 TO 1906-7.

Year.	Customs and Excise Revenue Collected in respect of—						Total for Commonwealth.
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	
	£	£	£	£	£	£	£
Half-year to 30/6/01 ...	1,019,008	1,356,099	710,830	351,953	491,371	221,328	4,150,589
1901-2 ...	2,812,731	2,876,524	1,297,663	698,647	1,335,614	373,140	8,894,319
1902-3 ...	3,478,742	2,499,014	1,260,934	689,756	1,396,002	360,607	9,685,055
1903-4 ...	3,229,786	2,443,505	1,131,761	699,792	1,258,725	342,189	9,105,758
1904-5 ...	3,083,617	2,488,842	1,096,475	678,880	1,172,064	330,651	8,799,530
1905-6 ...	3,233,922	2,537,070	1,183,244	688,041	1,030,813	326,395	8,999,485
1906-7 ...	3,573,313	2,719,431	1,277,914	781,826	952,617	343,455	9,648,556

12. **Taxation per Head.**—In the following table are given particulars concerning the amount of Commonwealth taxation per head of population contributed by the several States during the period from 1st January, 1901, to 30th June, 1907 :—

COMMONWEALTH TAXATION PER HEAD, 1901 TO 1906-7.

Year.	Customs and Excise Revenue per Head of Population Collected in respect of—																		Total for Commonwealth.		
	N.S.W.			Victoria.			Q'land.			S. Aust.			W. Aust.			Tas.					
	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
Half-yr. to 30/6/01	0	15	1	1	2	7	1	8	6	0	19	5	2	13	4	1	5	8	1	2	0
1901-2	2	0	11	1	19	3	2	11	4	1	18	2	6	17	7	2	2	10	2	6	6
1902-3	2	9	7	2	1	3	2	9	4	1	17	7	6	11	10	2	0	8	2	9	11
1903-4	2	5	3	2	0	5	2	3	11	1	17	11	5	10	11	1	18	2	2	6	5
1904-5	2	1	8	2	1	2	2	2	0	1	16	5	4	16	9	1	16	8	2	4	2
1905-6	2	3	4	2	1	8	2	4	10	1	16	5	4	0	11	1	16	1	2	4	5
1906-7	2	6	10	2	4	2	2	7	9	2	0	9	3	12	9	1	18	2	2	6	10

13. **Postal Revenue.**—Besides the Department of Trade and Customs the only large revenue-earning Commonwealth department is that under the control of the Postmaster-General, comprising the three branches of Post, Telegraph, and Telephone. This department was taken over by the Commonwealth on 1st March, 1901, and consequently contributed only four months' revenue to the Commonwealth total for the

financial period ended 30th June, 1901. Particulars relative to the net postal revenue collected in respect of the several States since the federalisation of the department are given hereunder:—

COMMONWEALTH POSTAL REVENUE, 1901 TO 1906-7.

Year.	Postal Revenue Collected in respect of—						Total for Common-wealth.
	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tas.	
	£	£	£	£	£	£	£
Four mths. to 30/6/01	276,936	177,931	95,586	90,703	67,735	31,774	740,665
1901-2	873,312	591,470	312,905	277,812	225,752	91,610	2,372,861
1902-3	906,798	622,700	300,737	255,214	225,244	94,037	2,404,730
1903-4	941,529	650,583	324,013	258,461	230,858	104,759	2,510,203
1904-5	980,151	683,480	331,774	266,719	257,503	112,924	2,632,551
1905-6	1,065,633	735,563	359,752	291,929	252,741	118,730	2,824,348
1906-7	1,191,489	797,972	422,346	327,269	259,688	129,810	3,128,574

A comparison of the figures for 1906-7 with those for 1901-2 indicates a substantial increase in the postal revenue of all the States, ranging from 36 per cent. in the case of New South Wales to 15 per cent. in that of Western Australia for the period of five years.

14. **Postal Revenue per Head.**—The postal revenue per head of population varies considerably in the several States, being highest in the case of Western Australia and lowest in that of Victoria. Particulars for the six complete financial years since Federation are as follows:—

COMMONWEALTH POSTAL REVENUE PER HEAD, 1901 TO 1906-7.

Year.	Postal Revenue per Head of Population Collected in respect of—						Total for Common-wealth.
	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tas.	
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1901-2 ...	0 12 8	0 9 9	0 12 4	0 15 2	1 3 3	0 10 6	0 12 5
1902-3 ...	0 12 11	0 10 3	0 11 9	0 13 11	1 1 1	0 10 7	0 12 5
1903-4 ...	0 13 2	0 10 9	0 12 7	0 14 0	1 0 4	0 11 8	0 12 9
1904-5 ...	0 13 5	0 11 4	0 12 9	0 14 4	1 1 3	0 12 6	0 13 3
1905-6 ...	0 14 3	0 12 1	0 13 8	0 15 5	0 19 10	0 13 1	0 13 11
1906-7 ...	0 15 7	0 13 0	0 15 9	0 17 1	0 19 10	0 14 5	0 15 2

15. **Details of Postal Revenue, 1906-7.**—Particulars relative to postal revenue are, in the Treasury statements, now classified under six heads:—(i.) private boxes and bags; (ii.) commission on money orders and postal notes; (iii.) telegraphs; (iv.) telephones; (v.) postage, and (vi.) miscellaneous. Details under these heads concerning the revenue collected in respect of the several States for the year ended 30th June, 1907, are given hereunder:—

COMMONWEALTH POSTAL REVENUE, 1906-7.

Particulars.	Postal Revenue Collected in respect of—						Total for Common-wealth.
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	
	£	£	£	£	£	£	£
Private boxes and bags ...	6,532	2,859	3,031	1,143	1,623	745	15,933
Commission—Money orders and postal notes	36,933	24,027	10,518	6,056	10,197	4,509	92,240
Telegraphs	185,257	139,201	74,476	97,650	71,868	19,715	588,167
Telephones	151,643	117,367	40,892	30,897	34,297	13,130	388,226
Postage	784,363	502,357	282,665	173,836	136,291	89,438	1,968,950
Miscellaneous	26,761	12,161	10,764	17,687	5,412	2,273	75,058
Total	1,191,489	797,972	422,346	327,269	259,688	129,810	3,128,574

16. **Details of Postal Revenue, 1901 to 1906-7.**—Particulars concerning the postal revenue of the Commonwealth for each of the years which have elapsed since the date of Federation are contained in the following table. Owing to the change in classification of postal revenue, which took place in 1903-4, full details for the earlier years are not available:—

COMMONWEALTH POSTAL REVENUE, 1901 TO 1906-7.

Particulars.	1st March to 30th June, 1901.	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.
	£	£	£	£	£	£	£
Private boxes and bags ...	2,647	17,904	16,517	15,491	15,791	14,975	15,933
Commission—Money orders and postal notes ...	24,860	83,759	78,624	81,456	84,891	88,868	92,240
Telegraphs	708,037	2,208,346	2,264,262	498,957	525,054	565,422	588,167
Telephones				286,827	312,320	352,214	388,226
Postage				1,556,862	1,620,065	1,754,790	1,968,950
Miscellaneous	5,121	62,852	45,327	71,610	74,430	48,079	75,058
Total	740,665	2,372,861	2,404,730	2,510,203	2,632,551	2,824,348	3,128,574

17. **Revenue from Patents.**—Under the Commonwealth Patents Act 1903, which was assented to on 22nd October, 1903, and came into force on 1st June, 1904, the complete control of the Patents administration of Australia passed from the several State Governments to that of the Commonwealth, which, under section 19 (*a*) of the Act mentioned, was authorised to collect for each State the fees to which it was entitled under the State Act in respect of proceedings then pending.

The revenue collected in respect of each of the States since the Act came into force is shown in the following table:—

COMMONWEALTH PATENTS REVENUE, 1903-4 TO 1906-7.

Year.	Patents Revenue Credited to—						Total for Commonwealth.
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	
	£	£	£	£	£	£	£
1903-4 (June only) ...	436	432	226	170	120	134	1,518
1904-5	2,035	2,899	1,621	1,244	1,129	1,631	10,559
1905-6	6,532	6,609	3,303	2,407	2,318	2,767	23,936
1906-7	4,976	4,702	2,908	1,772	1,997	1,662	18,017

It may be noted that, in their financial statement for 1903-4, the Commonwealth Treasury have credited the patents revenue for that year partly to "Miscellaneous Receipts" and partly to "New Revenue."

18. **Revenue from Trade Marks, etc.**—Under the several Acts of the Commonwealth legislature relating to trade marks, copyrights, and designs, the Commonwealth Government has assumed the exclusive administration of such matters, and now collects all revenue accruing therefrom. The financial year 1906-7 was the first in which this item appeared in the Commonwealth accounts, the total amount received being £6390, credited as follows:—New South Wales, £2305; Victoria, £1896; Queensland, £855; South Australia, £594; Western Australia, £437; and Tasmania, £303.

19. **Defence Revenue.**—The revenue appearing under the head of "Defence" comprises the receipts derived from the sale of stores and clothing, from fines, etc., and for 1906-7 amounted to only £5112.

20. **New Revenue.**—Under this head are included receipts in connection with exemption certificates under the Immigration Restriction Act, High Court fees, industrial fees, examination fees, forfeited electoral deposits, etc. This revenue is divided

amongst the States *per capita*, and thus treated as virtually repayments of money charged or to be charged as "Other" expenditure. The total revenue of this nature collected during 1906-7 was £12,529.

(C) Expenditure.

1. **Nature of Commonwealth Expenditure.** The disbursements by the Commonwealth Government of the revenue collected by it falls naturally, under the "book-keeping" system, into three classes, viz.:—

(*a*) Expenditure on transferred services.
(*b*) Expenditure on new services.
(*c*) Payment to States of surplus revenue.

Of these three, only the two first are actual expenditure, the last being merely a transfer, the actual expenditure being incurred by the States. In accordance with the provisions of the Constitution the expenditure on transferred services is debited to the several States in respect of which such expenditure has been incurred, while the expenditure on new services is distributed *per capita*. Surplus Commonwealth revenue is paid to the States monthly. During the earlier years of Federation, viz., until the end of the year 1903-4, new works, etc., for transferred departments were treated as transferred expenditure, and were charged to the States on whose behalf the expenditure had been incurred. In subsequent years all such expenditure has been regarded as expenditure on new services and has been distributed amongst the States *per capita*.

2. **Expenditure Debited to the Several States.**—The total expenditure by the Commonwealth Government during the period 1901 to 1906-7 and the amounts debited to the several States are shewn in the following table:—

COMMONWEALTH EXPENDITURE, 1901 TO 1906-7.

State to which Debited.	Half-year to 30/6/1901.	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.
	£	£	£	£	£	£	£
N.S.W. ...	409,391	1,312,534	1,342,929	1,485,095	1,492,671	1,572,900	1,756,986
Victoria ...	360,026	1,056,771	1,018,829	1,098,015	1,166,532	1,198,382	1,336,589
Queensland ...	224,029	706,611	652,662	656,089	675,474	691,898	768,201
S. Australia ...	111,378	358,259	367,392	404,577	402,135	425,792	468,886
W. Australia	114,178	339,589	365,038	424,495	400,565	415,143	441,533
Tasmania ...	77,051	158,982	154,521	184,248	185,452	193,426	215,122
C'wealth ...	1,296,053	3,932,746	3,901,371	4,252,519	4,322,829	4,497,541	4,987,317

In all the States the expenditure for 1906-7 was higher than that for any preceding year, and was considerably higher than the expenditure for 1901-2. New South Wales with an advance of £444,452 exhibited the largest numerical increase, while Tasmania, whose expenditure increased by £56,140, had the highest proportional increase, viz., 35½ per cent.

3. **Expenditure per Head.**—Particulars concerning the Commonwealth expenditure per head in the several States are furnished hereunder:—

COMMONWEALTH EXPENDITURE PER HEAD, 1901 TO 1906-7.

State.	Half-year to 30/6/1901.			1901-2.			1902-3.			1903-4.			1904-5.			1905-6.			1906-7.		
	£	s.	d.	£	s.	d.	£	s	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
N.S.W. ...	0	6	1	0	19	1	0	19	2	1	0	10	1	0	6	1	1	1	1	3	0
Victoria ...	0	6	0	0	17	5	0	16	10	0	18	2	0	19	3	0	19	8	1	1	8
Queensland ...	0	9	0	1	7	11	1	5	7	1	5	5	1	5	11	1	6	2	1	8	8
S. Australia ...	0	6	2	0	19	7	1	0	0	1	1	11	1	1	7	1	2	6	1	4	5
W. Australia	0	12	5	1	15	0	1	14	3	1	17	5	1	13	1	1	12	7	1	13	9
Tasmania ...	0	8	11	0	18	3	0	17	5	1	0	6	1	0	7	1	1	4	1	3	11
C'wealth ...	0	6	10	1	0	7	1	0	1	1	1	8	1	1	8	1	2	2	1	4	3

4. **Details of Expenditure.**—Details of the expenditure of the Commonwealth Government since the inauguration of Federation are given hereunder:—

COMMONWEALTH EXPENDITURE, 1901 TO 1906-7.

Heads of Expenditure.	Half-Year to 30th June, 1901.	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.
	£	£	£	£	£	£	£
Transferred expenditure (including new works. etc.)—							
Trade and Customs	121,444	260,322	272,622	264,617	258,331	262,058	263,625
Defence	283,515	934,646	746,526	835,996	907,827	949,595	1,010,013
Postal	809,839	2,461,916	2,563,617	2,692,305	2,694,244	2,776,940	2,948,785
Refunds and Advances ...	...	...	3,042	30	118	25	778
"Other" Expenditure (exclusive of new works, etc.) ...	131,255	275,862	315,564	459,571	462,309	508,924	764,116
Total	1,296,053	3,932,746	3,901,371	4,252,519	4,322,829	4,497,542	4,987,317

During the five years between 1901-2 and 1906-7 the total cost of the several departments increased from £3,932,746 to £4,987,317, an increase of £1,054,571, or about 27 per cent. The expenditure in the Department of Trade and Customs remained practically the same throughout the period, while that in the Defence Department advanced by only £75,367, or about 8 per cent. On the other hand the postal expenditure increased by £486,869, or nearly 20 per cent., and "other" expenditure, exclusive of new works, etc., by £488,254, or about 177 per cent. It should be noted in this connection, however, that the increase of £486,869 in postal expenditure was accompanied by an increase during the same period in postal revenue to the extent of £755,713, and that a very considerable portion of the increase in "other" expenditure was due to the payment of sugar bonus, which amounted to £328,210 in 1906-7, as against *nil* in 1901-2.

5. **New Works, etc.**—As previously mentioned the Commonwealth expenditure on new works, etc., for transferred departments was, prior to 1904-5, included under the head of "transferred" expenditure, but in that and subsepuent years has been treated as "other" expenditure and debited to the States *per capita*. For convenience of comparison this expenditure has, in the foregoing table, been shewn under the department for which it was incurred. Particulars of the expenditure in each year on new works, etc., are given in the following table:—

COMMONWEALTH EXPENDITURE ON "NEW WORKS, ETC." 1901-2 TO 1906-7.

Departments.	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.
	£	£	£	£	£	£
Trade and Customs ...	150	53	3,467	1,980	1,814	1,162
Defence	57,265	22,064	113,243	200,259	171,633	195,159
Postal	37,149	135,699	187,809	131,829	146,575	275,737
Total	94,564	157,816	304,519	334,068	320,022	472,058

It will be seen that the Commonwealth expenditure under this head has increased rapidly in recent years, the total for 1906-7 being nearly three times as great as that for 1902-3. For 1907-8 the estimated expenditure on "new works, etc." is £811,874.

6. "**Other**" **Expenditure.**—In accordance with sections 89 and 93 of the Constitution, all expenditure of the Commonwealth other than that incurred solely for the maintenance or continuance as at the time of transfer of any department transferred from the State to the Commonwealth, is required to be apportioned to the several States, each being debited "according to the number of its people." In consequence of this provision all expenditure in connection with transferred departments on account of central office

staffs is charged as "other" or new expenditure, and not as "transferred" expenditure. The effect of this is that the ordinary statements in which division is made into "transferred" and "other" expenditure does not, for the purpose of comparison, furnish such complete information as could be desired. It has therefore been deemed expedient to rearrange the items so as to obtain a more accurate statement of the cost of the several branches of the Commonwealth service. In this rearrangement the figures given for 1901-2 represent the cost of service actually rendered in that year, while those for 1902-3 and subsequent years represent in each case the payments made in the respective years. This has been done in order that a fair comparison might be instituted with succeeding years, 1901-2 having borne the very heavy arrears of the initial six months of Federation, and those attaching to the transferred departments at the date of transfer.

7. **Cost of Departments, etc.**—Prepared in the manner indicated in the preceding paragraph, the cost of the several branches of the Commonwealth service for the years 1901-2 to 1906-7 was as follows:—

COST OF COMMONWEALTH DEPARTMENTS, ETC., 1901-2 TO 1906-7.

Departments, etc.	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.
	£	£	£	£	£	£
Governor-General ...	29,185	14,832	16,793	17,170	23,759	18,612
Parliament	122,796	108,939	192,354	149,934	132,528	177,061
External Affairs ...	32,876	34,518	31,953	36,516	39,484	67,241
Attorney-General ...	2,680	2,627	16,347	18.583	20,882	27,609
Home Affairs	12,282	32,967	32,613	35,013	35,643	41,385
Treasury	10,466	14,111	14,625	15,993	17,528	17,768
Trade and Customs ...	262,503	339,633	370,368	406,041	442,614	634,328
Defence	861,218	766,880	855,764	934,598	970,345	1,035,795
Postmaster-General ...	2,383,815	2,568,846	2,697,454	2,699,667	2,784,664	2,966,098
All other Expenditure ...	15,397	18,018	24,248	9,314	30,094	1,420
Total	3,733,218	3,901,371	4,252,519	4,322,829	4,497,541	4,987,317

The largeness of the expenditure under the head of Parliament in the years 1903-4 and 1906-7 was in great measure due to the fact that the general elections were held in these years, while the expenditure in connection with the sugar bounties is mainly responsible for the rapid increase which has taken place in the cost of the Department of Trade and Customs. More detailed reference to the items included under the above general heads is furnished in the succeeding paragraphs.

8. **Governor-General.**—In section 3 of the Constitution it is enacted that, until the Commonwealth Parliament otherwise provides, there shall be payable out of the Consolidated Revenue Fund for the salary of the Governor-General an annual sum of ten thousand pounds, and a proviso is made that the salary of the Governor-General shall not be altered during his continuance in office. The total expenditure in connection with the Governor-General and his establishment for the six years 1901-2 to 1906-7 is as follows:—

EXPENDITURE, GOVERNOR-GENERAL AND ESTABLISHMENT, 1901-2 TO 1906-7.

Details.	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.
	£	£	£	£	£	£
Salary	10,000	10,000	10,000	10,000	10,000	10,000
Royal visit	10,000	—	—	—	—	—
Repairs to Govt. Houses	2,553	2,405	5,991	5,869	5,625	6,232
Contingencies... ...	6,632	2,427	802	1,301	8,134	2,380
Total	29,185	14,832	16,793	17,170	23,759	18,612

The expenses connected with the Royal visit were responsible for the largeness of this item in 1901-2, while the heavy charge under the head of Contingencies in 1905-6 was to some extent due to payment of arrears of travelling expenses.

9. **Parliament.**—Under this head have been grouped all the items of expenditure connected with the Parliamentary Government of the Commonwealth, including the salaries of the Ministers and the allowances to senators and members of the House of Representatives. Details for the six years 1901-2 to 1906-7 are furnished in the table given hereunder:—

EXPENDITURE, COMMONWEALTH PARLIAMENT, 1901-2 TO 1906-7.

Details.	1901-2.	1902-3.	1903-4.	1904-5,	1905-6.	1906-7.
	£	£	£	£	£	£
Salaries of Ministers	12,000	12,000	11,929	12,000	12,000	11,947
Allowances to Senators ...	14,437	14,344	14,263	14,400	14,400	14,367
Allowances to Members of House of Representatives	29,918	30,000	28,259	30,025	30,000	27,389
Officers, Staff, Contingencies, etc.	30,317	27,878	28,236	28,964	29,309	27,745
Repairs, Maintenance, etc. ...	1,983	200	782	991	170	846
Printing	22,621	13,332	14,891	14,306	16,615	12,346
Travelling Expenses of Members	8,659	7,553	8,966	8,548	8,425	9,373
Insurance	312	337	342	342	342	342
Electoral Office	773	1,207	3,638	3,581	2,934	5,085
Election Expenses	1,776	522	47,388	2,555	1,925	36,113
Referendum	...	...	...	...	...	793
Administration of Electoral Act	...	1,566	33,660	34,222	16,408	30,715
Total	122,796	108,939	192,354	149,934	132,528	177,061

In section 66 of the Constitution provision is made that there shall be payable out of the Consolidated Revenue Fund of the Commonwealth, for the salaries of Ministers of State, an annual sum which, until Parliament otherwise provides, shall not exceed £12,000. This provision is still in force. Allowances to senators and members of the House of Representatives are also provided for in the Constitution, section 48 of which specifies that until Parliament otherwise provides each such allowance shall consist of £400 a year, reckoned from the day on which the member takes his seat. During the second session of the Commonwealth Parliament in 1907 the question of allowances to members was under consideration, and an Act was passed raising the annual allowance from £400 to £600, such increase to date from 1st July, 1907.

10. **External Affairs.**—Since the establishment of the Commonwealth the portfolio taken by the Prime Minister has, with one exception, been that of Minister of State for External Affairs. Under the control of this department is placed the expenditure in connection with the Executive Council, the London Office, and Papua. Particulars for the six years, 1901-2 to 1906-7, are as follows:—

EXPENDITURE, EXTERNAL AFFAIRS DEPARTMENT, 1901-2 TO 1906-7.

Details.	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.
	£	£	£	£	£	£
Chief Office	7,718	9,491	8,308	7,500	7,500	9,248
Executive Council ...	1,263	1,477	1,103	830	836	887
London Office ...	...	...	...	...	673	1,559
Papua	20,000	20,000	20,000	21,003	20,000	23,626
Rents, repairs, &c. ...	1,732	377	142	191	437	498
Miscellaneous ...	2,163	3,173	2,400	6,992	10,038	31,423
Total	32,876	34,518	31,953	36,516	39,484	67,241

11. **Papua.**—The sums shewn in the above table as expenditure in connection with Papua represent the Commonwealth grants towards the cost of administering that territory, as well as certain additional amounts expended in 1904-5 and 1906-7. The ordinary revenue and expenditure of Papua are kept distinct from those of the Commonwealth. Apart from the Commonwealth contribution the principal source of revenue is the Custom House. Details for the six years, 1901-2 to 1906-7, are as follows :—

PAPUAN REVENUE, 1901-2 TO 1906-7.

Details.	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.
	£	£	£	£	£	£
Customs dues ...	13,161	13,420	17,911	15,692	15,990	15,924
Other collections ...	3,707	5,687	4,316	3,582	4,246	5,889
Commonwealth grant ...	20,000	20,000	20,000	20,000	20,000	20,000
Total	36,868	39,107	42,227	39,274	40,236	41,813

One of the largest items of Papuan expenditure is the maintenance, etc., of vessels and boats, including the steam yacht "Merrie England," the total outlay under this head for 1906-7 being no less than £9120. The expenditure on public justice for 1906-7 totalled £11,603, comprising "magistrates, etc.," £5156; "armed native constabulary," £4024, and gaols, £2423. The total expenditure for each of the six years, 1901-2 to 1906-7, was as follows :—

PAPUAN EXPENDITURE, 1901-2 TO 1906-7.

Particulars.	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.
	£	£	£	£	£	£
Total expenditure ...	38,467	37,577	35,492	36,217	41,804	45,336

12. **Attorney-General's Department.**—The rapid growth during recent years in the expenditure connected with this Department has been brought about in large measure by the creation and subsequent extension of the Federal High Court, the total cost of which for the year 1906-7 amounted to £19,878. Details for the six years 1901-2 to 1906-7 are furnished hereunder :—

EXPENDITURE, ATTORNEY-GENERAL'S DEPARTMENT, 1901-2 TO 1906-7.

Details.	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.
	£	£	£	£	£	£
Attorney-General's Office ...	2,575	2,475	2,443	2,626	3,219	3,540
Crown Solicitor's Office... ...	...	...	1,687	1,816	1,922	2,613
Salaries of Justices of High Court	...	...	3,023	9,500	9,500	13,815
High Court expenses	...	...	4,791	4,078	5,697	6,063
Court of Conciliation & Arbitration	...	...	...	23	75	505
Rent, repairs, etc.	30	77	1,403	540	469	1,073
Miscellaneous...	75	75	...	...	...	...
Total	2,680	2,627	16,347	18,583	20,882	27,609

13. **Home Affairs Department.**—The creation of new departments such as the Bureau of Census and Statistics, and the Meteorological Bureau, and the extension of the field of operations of the Public Works branch, all of which are grouped for general administrative purposes under the Department of Home Affairs, have led to a considerable increase in the expenditure, and for 1907-8 the estimated expenditure amounts to £72,823. Particulars for the six years 1901-2 to 1906-7 are as follows :—

EXPENDITURE, HOME AFFAIRS DEPARTMENT, 1901-2 TO 1906-7.

Details.	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.
	£	£	£	£	£	£
Chief Office	4,000	6,938	7,124	8,219	8,279	8,864
Public Service Commissioner ...	292	11,605	13,519	13,973	13,759	12,738
Public Works	408	1,755	3,391	6,175	9,099	9,825
Census and Statistics ...	...	...	...	...	...	5,007
Meteorological Bureau ...	...	...	...	...	...	888
Rents, repairs, etc.	3,570	5,379	3,565	4,430	2,592	3,731
Miscellaneous	4,012	7,290	5,014	2,216	1,914	332
Total	12,282	32,967	32,613	35,013	35,643	41,385

14. **Treasurer's Department.**—The sub-departments under the control of the Commonwealth Treasurer are the Treasury and the Audit Office. Details of the expenditure of this department for each of the six years 1901-2 to 1906-7 are furnished hereunder:—

EXPENDITURE, TREASURER'S DEPARTMENT, 1901-2 TO 1906-7.

Details.	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.
	£	£	£	£	£	£
Treasury	4,592	7,024	7,387	7,710	8,464	8,960
Audit	3,923	5,739	6,046	6,384	6,698	7,003
Rents, repairs, etc.	904	941	664	1,272	1,349	1,285
Miscellaneous	1,047	407	528	627	1,017	520
Total	10,466	14,111	14,625	15,993	17,528	17,768

15. **Trade and Customs.**—Under this head have been included the expenditure of all the sub-departments under the control of the Minister of Trade and Customs, as well as the amounts payable as sugar bounties and the expenses in connection therewith. The large increase in the total expenditure which these figures exhibit for recent years has been due in a large measure to the increased amount payable in respect of sugar bounties. Particulars for the six years 1901-2 to 1906-7 are given in the following table:—

EXPENDITURE, TRADE AND CUSTOMS, 1901-2 TO 1906-7.

Details.	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.
	£	£	£	£	£	£
Chief Office...	3,694	6,175	6,189	6,251	6,625	7,388
Customs (ordinary)	252,842	264,682	254,703	245,774	247,333	248,631
Patents	...	...	1,489	8,051	8,915	10,017
Trade Marks and Copyrights ...	...	...	...	...	1,401	3,998
Pensions and retiring allowances	689	346	1,973	4,541	5,196	6,194
Rents, repairs, etc.	5,035	7,169	5,332	7,589	9,357	9,140
Sugar bounties and expenses ...	...	60,827	97,045	128,178	154,709	335,916
New Works, etc.	150	53	3,467	1,980	1,814	1,162
Miscellaneous	93	381	170	3,677	7,264	11,882
Total	262,503	339,633	370,368	406,041	442,614	634,328

16. **Cost of Collection.**—Excluding from the above the expenditure incurred in connection with Patents, Trade Marks, Copyrights, and Sugar Bounties, the balance may be considered as representing approximately the cost entailed by the collection of the Customs and Excise revenue of the Commonwealth. Details for the six years 1901-2 to 1906-7 are as follows:—

COMMONWEALTH CUSTOMS AND EXCISE REVENUE, 1901-2 TO 1906-7.

Particulars.	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.
	£	£	£	£	£	£
Gross Customs and Excise revenue ...	8,894,319	9,685,055	9,105,758	8,799,530	8,999,485	9,648,556
Cost of Collection	262,503	278,806	271,834	269,812	277,589	284,397
Net revenue	8,631,816	9,406,249	8,833,924	8,529,718	8,721,896	9,364,159
Percentage of cost of collection on gross revenue	2.95%	2.88%	2.99%	3.07%	3.08%	2.95%

It will be seen that throughout the period the cost of collecting the Customs and Excise Revenue has been approximately 3 per cent. of the revenue collected, varying only between 2.88 per cent. in 1902-3 and 3.08 per cent. in 1905-6.

17. **Defence.**—The Commonwealth expenditure in connection with Defence, which in 1901-2 amounted to £861,218, had by 1906-7 grown to £1,035,979, the principal factors of this increase being the expenditure in connection with naval matters and that on new works, rifles, etc. Particulars for the six years 1901-2 to 1906-7 are as follows:—

EXPENDITURE, DEFENCE, 1901-2 TO 1906-7.

Details.	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.
	£	£	£	£	£	£
Chief Office	11,717	19,747	19,128	20,716	18,832	19,249
Military	586,317	517,361	458,937	490,713	500,377	535,178
Naval	172,246	149,701	237,214	196,728	245,778	250,200
Pensions and retiring allowances	...	934	670	712	907	974
Rents, repairs, etc. ...	26,516	22,796	24,551	23,923	29,732	27,394
New works, etc. ...	53,321	22,064	113,242	200,259	171,633	195,159
Miscellaneous	11,101	34,277	2,022	1,547	3,086	7,641
Total	861,218	766,880	855,764	934,598	970,345	1,035,795

18. **Postal.**—From a total of £2,383,815 in 1901-2 the cost of the department under the control of the Postmaster-General increased to £2,966,098 in 1906-7. Of this increase the ordinary cost of working the department was responsible for £314,078, while the expenditure on new works, etc., advanced by £238,588. Details for the six years 1901-2 to 1906-7 are furnished hereunder:—

EXPENDITURE, POSTAL DEPARTMENT, 1901-2 TO 1906-7.

Details.	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.
	£	£	£	£	£	£
Chief Office ...	5,059	4,908	4,788	5,184	6,484	8,125
Postal Department (ordinary) ...	2,304,689	2,369,382	2,450,638	2,505,828	2,574,210	2,618,767
Pensions and retiring allowances	1,988	3,862	4,556	8,091	12,768	16,573
Rents, repairs, etc.	33,470	50,146	42,035	42,916	40,550	43,235
New Works, &c....	37,149	135,699	187,809	131,829	146,575	275,737
Miscellaneous ...	1,460	4,849	7,628	5,819	4,077	3,661
Total ...	2,383,815	2,568,846	2,697,454	2,699,667	2,784,664	2,966,098

19. **Miscellaneous.**—In addition to the foregoing there are certain small items which do not come under any of the heads enumerated. For 1906-7 these comprised an expenditure of £642 on machinery and plant for the printing office, and £778 being refund of fines under the Immigration Restriction Act.

(D) Surplus Revenue Paid to States.

1. **Net Revenue.**—As mentioned in section 1, the Constitution provides under sections 87, 93 and 95 for the payment to the States of all surplus revenue of the Commonwealth, such payment to amount in the aggregate during the continuation of the Braddon clause to not less than three-fourths of the net revenue from Customs and Excise. The expression "net revenue" used in section 87 has been taken to mean the gross revenue less drawbacks and refunds, and in addition cost of collection. This view, adopted by the Commonwealth Government, is that indicated by Quick and Garran in their "Annotated Constitution of the Australian Commonwealth," in which they say: "The net revenue from duties of Customs and Excise is the total receipts from these sources after deducting the cost of collection. No attempt is made in the Constitution to define the deductions which may be made in order to arrive at the net revenue; this is a matter of book-keeping, which is left wholly to the Executive Government." In actual practice the statutory three-fourths of net Customs and Excise revenue is ascertained by the Commonwealth Treasury by deducting from the total Customs and Excise revenue (less drawbacks and refunds) the "transferred" expenditure of the Department of Trade and Customs and the expenditure on new works for that department, and taking three-fourths of the result.

2. **Actual Payments of Surplus.**—In the following table a comparison is made between the amounts actually paid to the several States since the inauguration of Federation, and the amounts which, in accordance with the preceding paragraph, the Commonwealth was constitutionally bound to pay. It should be noted that the payments here shewn for any year are those made on account of that year although actually paid after its close:—

PAYMENTS OF SURPLUS REVENUE, 1901 TO 1906-7.

Particulars.	Half-year to 30th June, 1901.	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.
	£	£	£	£	£	£	£
Payment on account of period	3,599,702	7,364,236	8,204,563	7,378,479	7,142,769	7,384,383	7,845,574
Three-fourths of net Customs and Excise revenue ...	3,021,857	6,475,495	7,059,329	6,833,147	6,407,483	6,554,478	7,039,573
Amount paid to States out of the one-fourth retainable by Commonwealth ...	577,845	888,741	1,145,234	745,332	735,286	829,910	806,001

It will be seen from the foregoing table that during the six and a half years which elapsed since the foundation of the Commonwealth the surplus revenue returned to the States has exceeded the statutory requirements by no less a sum than £5,728,349; in other words, the Commonwealth has, during the period, returned to the States surplus revenue to the extent of 85 per cent. of the net revenue from Customs and Excise instead of the 75 per cent. required under the Constitution.

3. **Payments to the Several States.**—In the following table are furnished particulars relative to the amounts actually paid to the several States on account of the half-year ended 30th June, 1901, and of each of the financial years 1901-2 to 1906-7:—

SURPLUS COMMONWEALTH REVENUE PAID TO STATES FOR 1901 TO 1906-7.

State.	Half-y'ar to 30th June, 1901.	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.	Aggregate. 1901-7.
	£	£	£	£	£	£	£	£
New South Wales ...	887,573	2,381,733	3,048,090	2,691,287	2,532,156	2,741,929	3,025,137	17,307,905
Victoria	1,176,784	1,919,729	2,108,291	2,002,605	2,010,502	2,094,503	2,201,013	13,518,427
Queensland	582,688	904,890	911,129	804,325	755,705	858,462	938,935	5,756,134
South Australia ...	331,671	619,838	579,315	551,710	558,295	562,000	644,564	3,842,393
Western Australia ...	444,029	1,221,948	1,256,923	1,064,035	1,031,223	871,960	774,882	6,665,900
Tasmania	176,057	316,098	300,815	264,517	259,888	255,529	261,043	1,833,947
Total	3,599,702	7,364,236	8,204,563	7,378,479	7,142,769	7,384,383	7,845,574	48,919,706

The surplus Commonwealth revenue paid on account of the year 1906-7 was higher than that paid on account of 1905-6 in the case of every State except Western Australia, where a decline of no less than £97,078 was experienced. The payments on account of 1906-7 to Victoria, Queensland, and South Australia were the highest on record for those States, while New South Wales and Western Australia received their highest payments in 1902-3 and Tasmania in 1901-2. The year 1902-3 was that on account of which the aggregate payment by the Commonwealth to the States was highest, caused to a great extent by the large amount collected in grain duties during that year.

4. **The Commonwealth Fourth of Net Customs and Excise Revenue.**—As noted in paragraph two above, the Commonwealth has in each financial year paid to the States a considerable portion of the one-fourth of net Customs and Excise revenue which it was entitled under the Constitution to spend for its own purposes. The manner in which this extra payment was distributed amongst the several States from 1901 to 1906-7 is exhibited in the following table:—

PAYMENT TO STATES FROM COMMONWEALTH FOURTH OF NET CUSTOMS AND EXCISE REVENUE, 1901 TO 1906-7.

State.	Half-y'ar to 30th June, 1901.	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.	Aggregate. 1901-7.
	£	£	£	£	£	£	£	£
New South Wales ...	145,070	319,771	491,859	327,337	306,166	371,023	400,937	2,362,163
Victoria	184,195	185,195	282,608	217,289	197,665	241,594	209,543	1,518,089
Queensland ...	70,525	— 20,188*	15,077	— 2,455*	— 28,811*	8,639	18,812	61,599
South Australia ...	76,449	115,742	81,360	42,812	63,397	65,970	81,890	527,629
Western Australia	87,904	244,232	235,977	144,890	177,628	124,922	84,521	1,100,074
Tasmania	13,702	43,989	38,344	15,459	19,241	17,762	10,298	158,795
Total	577,845	888,741	1,145,284	745,332	785,286	829,910	806,001	5,728,349

* Amount retained by Commonwealth in addition to one-fourth of the State's net revenue from Customs and Excise.

5. **Proportion Actually Paid.**—For the period of six and a half years from the 1st January, 1901, to 30th June, 1907, the percentage of net revenue from Customs and Excise duties paid to the several States was as follows:—New South Wales, 87 yer cent.; Victoria, 84½ per cent.; Queensland, 76 per cent.; South Australia, 87 per cent.; Western Australia, 90 per cent.; Tasmania, 82 per cent.

(E) Interstate Customs and Excise Adjustments.

1. **Reason for Adjustments.**—In order that the duties of Customs and Excise should, during the continuance of the "book-keeping system" of Commonwealth and State finance, be credited to that State in which the goods subject to such duties have been consumed, provision is made in section 93 of the Constitution that "during the first five

years after the imposition of uniform duties of Customs, and thereafter until the Parliament otherwise provides, the duties of Customs chargeable on goods imported into a State and afterwards passing into another State for consumption, and the duties of Excise paid on goods produced or manufactured in a State and afterwards passing into another State for consumption, shall be taken to have been collected not in the former but in the latter State." In the ordinary course duties collected in any State will be credited to that State, and compliance with the above provisions necessitates the debiting of the State with the duty collected when the goods paying such duty pass for consumption into another State, the latter being credited with the amount. Returns shewing such credits and debits thus furnish an indication of the relative positions of the several States as distributors of dutiable goods. States in which the adjustment results in a net debit may be looked upon as distributing States, while those in which the result is a net credit are consuming States.

2. **Interstate Adjustments for 1906-7.**—Particulars for each of the States for the year ended 30th June, 1907, are furnished hereunder :—

INTERSTATE ADJUSTMENTS, 1906-7.

State.	Customs.		Excise.		Total Customs and Excise.		
	Credits.	Debits.	Credits.	Debits.	Credits.	Debits.	Net Results
	£	£	£	£	£	£	£
New South Wales	259,120	353,457	65,305	121,183	324,425	474,640	Dr. 150,215
Victoria	132,740	446,622	31,831	142,777	164,571	589,399	Dr. 424,828
Queensland ...	200,459	26,670	85,215	11,285	285,674	37,956	Cr. 247,719
South Australia ...	127,255	107,203	41,220	23,548	168,475	130,751	Cr. 37,724
Western Australia	117,402	9,650	54,476	305	171,878	9,965	Cr. 161,913
Tasmania ...	117,568	10,942	27,602	6,551	145,170	17,493	Cr. 127,677
Total ...	954,544	954,544	305,649	305,649	1,260,193	1,260,193	—

3. **Net Results, 1901-2 to 1906-7.**—The net results of the interstate Customs and Excise adjustments for each of the six years, 1901-2 to 1906-7, since the imposition of uniform duties of Customs, are given in the following table :—

INTERSTATE ADJUSTMENTS, 1901-2 TO 1906-7.

State.	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.
	£	£	£	£	£	£
New South Wales	Dr. 24,645	Dr. 75,608	Dr. 122,309	Dr. 117,953	Dr. 188,396	Dr. 150,215
Victoria	Dr. 61,314	Dr. 196,152	Dr. 254,283	Dr. 316,006	Dr. 366.412	Dr. 424,828
Queensland	Cr. 50,376	Cr. 114,935	Cr. 158,794	Cr. 175,510	.Cr. 214,358	Cr. 247,719
South Australia	Dr. 4,749	Cr. 21,184	Cr. 20,721	Cr. 28,498	Cr. 36,940	Cr. 37,724
Western Australia	Cr. 1,766	Cr. 37,843	Cr 90,422	Cr. 128,805	Cr. 135,918	Cr. 161,913
Tasmania	Cr. 38,566	Cr. 97,798	Cr. 106,640	Cr. 101,146	Cr. 112,592	Cr. 127,677

It will be seen that Victoria and New South Wales are the principal distributing States, Victoria occupying the leading position, while Queensland, Western Australia, and Tasmania are the principal consuming States. South Australia occupies what may be considered as a middle position, being both a distributor and a consumer on a large scale, though rather more of the latter than the former. The growth of Victoria as a distributing centre for the Commonwealth has been both continuous and rapid.

§ 3. Trust Fund.

1. **Trust Accounts.**—The Trust Fund credit balance on 30th June, 1907, amounted to £158,141, as compared with £174,968 for the corresponding date in the preceding year. Details concerning the various trust accounts contributing to this amount are as follows :—

COMMONWEALTH TRUST FUND, 30TH JUNE, 1907.

Trust Accounts.	Balance at 30th June, 1907.	Trust Accounts.	Balance at 30th June, 1907.
	£		£
C'wealth Ammunition Material ...	39	Officers' Assurance	172
Small Arms Ammunition ...	18,163	Defalcations	199
Defence Clothing Material ...	5,091	Guarantee Fund	5,464
Defence Force Stores, Collections	11,453	Other Trust Moneys—	
Deferred Pay—military ...	1,152	External Affairs	50
Small Arms	5,306	Attorney-General	438
Unclaimed Militia Pay—military	1,136	Home Affairs	143
,, ,, naval	349	Customs	14,962
Customs Officers' Overtime ...	748	Patents	15
International Telegraph ...	3	Defence	2,070
Money Order	25,000	Post Office...	26,014
Internat'n'l Postal & Money Order	8,801	Naval Agreement Act ...	785
Pacific Cable Board	43	Repatriation of Pacific Islanders	1,185
Government Printer	5,240		
Pensions	24,120	Total	158,141

2. **Distribution.**—The amounts to credit of Trust Fund in the several States on 30th June, 1907, were as follows:—New South Wales, £51,216; Victoria, £58,492; Queensland, £24,801; South Australia, £7404; Western Australia, £7428, and Tasmania, £8800. The total credit balance of £158,141 was held in the following manner:—On fixed deposit, £43,000; Savings Bank deposit, £163; advances to Postal Department, £25,000; held in London, £400; on current account, £89,578.

SECTION XX.

STATE FINANCE.

§ 1. General.

1. **Functions of State Governments.**—In financial comparisons some recognition of the actual functions of the various Governments concerned becomes an essential. Costly developmental work, for example, may not only be economically justifiable, but an essential of progress, and parsimonious expenditure a serious economic blunder. For a very large expenditure may indicate either gross extravagance and bad economy on the one hand or healthy and vigorous progress and good economy on the other. Thus the grade or variety of development of the administration of the several States, or the assumptions of different functions of Government, make comparisons of total expenditure but of little value in themselves. They are obviously equivocal as a criterion of the true economy of any administration.

Moreover, direct comparisons of public expenditure are difficult, if not impossible, owing to the fact that functions which in one State or country are assumed by the central Government, are in another State relegated to local governing bodies.

Similarly as regards revenue, imposts which in some States are levied by the central Government are in others considered as matters to be dealt with locally. Under these circumstances care is needed in instituting comparisons beeween the several States, and the particulars contained in this section should be read in connection with those contained in Section XXVI., dealing with Local Government. In many ways also the budgets of the Australian Governments differ materially from those of most European countries owing to the inclusion therein of the revenue and expenditure of departments concerned in rendering public services, such for instance as railways, tramways, water supply, etc., which, in the other countries referred to, are sometimes left to private enterprise.

2. **Accounts of State Governments.**—The various financial transactions of the States are in each case concerned with one or other of three funds—the "Consolidated Revenue Fund," the "Trust Funds," and the "Loan Funds." All revenue collected by the State is placed to the credit of its Consolidated Revenue Fund, from which payments are made under the authority of an annual Appropriation Act passed by the Legislature, or by a permanent appropriation under a special Act. The hypothecation of the revenue from a specific tax to the payment for some special service is not practised in Australia, all statutory appropriations ranking on an equality as charges on the Consolidated Revenue Fund. The Trust Funds comprise all moneys held in trust by the Government, and include such items as savings bank funds, sinking funds, insurance companies' deposits, etc. The Loan Funds are credited with all loan moneys raised by the State, and debited with the expenditure therefrom for public works or other purposes.

3. **Inter-relation of Commonwealth and State Finance.**—The principal alteration in State finance, brought about by Federation, has been that the States have transferred to the Commonwealth the large revenue received by the Customs and Postal Departments, and have been relieved of the expenditure connected with these and the Defence Departments, while on the other hand, a new item of State revenue has been introduced, viz.,

the payment to the States of the surplus revenue of the Commonwealth. Provision for the taking over by the Commonwealth of certain of the public debts of the States is made in section 105 of the Constitution, but up to the present no definite arrangements have been made for any such transfer.

§ 2. State Consolidated Revenue Funds.

(A) Receipts.

1. **Sources of Revenue.**—The principal sources of State revenue are:—

(a) Taxation.
(b) The public works and services controlled by the State Governments.
(c) Sale of and rental from Crown lands.
(d) The surplus Commonwealth revenue returned to the States.
(e) Miscellaneous sources, comprising fines, fees, interest, etc.

Of these sources that yielding the largest revenue for the States as a whole is the group of public works and services, the principal contributor being the Government railways and tramways. Next in magnitude comes the payment of surplus revenue by the Commonwealth, followed in order by Taxation and Land Revenue.

2. **Amount Collected.**—The following table furnishes particulars of the total amount of consolidated revenue collected by the several States during the six years 1901-2 to 1906-7:—

STATE REVENUES, 1901-2 TO 1906-7.

Year.	N.S.W.	Victoria.	Queensl'nd.	S. Aust.	W. Aust.	Tas.	Total.
	£	£	£	£	£	£	£
1901-2 ...	11,007,356	6,997,792	3,535,062	2,477,431	3,354,123	826,163	28,197,927
1902-3 ...	11,296,069	6,954,619	3,526,465	2,530,568	3,630,238	734,663	28,672,622
1903-4 ...	11,248,328	7,319,949	3,595,440	2,568,100	3,550,016	857,668	29,139,501
1904-5 ...	11,336,918	7,515,742	3,595,399	2,798,849	3,615,340	852,681	29,714,929
1905-6 ...	12,283,082	7,811,475	3,853,523	2,864,209	3,558,939	900,657	31,271,885
1906-7 ...	13,392,435	8,345,534	4,307,912	3,252,705	3,401,354	970,843	33,670,783

The figures given in this table relate in each instance to the financial year ended 30th June, except in the case of Tasmania, where the figures shewn for 1901-2, 1902-3, and 1903-4 relate respectively to the years ended 31st December, 1901, 1902, and 1903.

During the five years from 1901-2 to 1906-7 the aggregate revenues of the States increased by no less a sum than £5,472,856, or little short of 20 per cent. Increases were in evidence in all the States, the largest being that of £2,385,079 in New South Wales, and the smallest an increase of £47,231 in the case of Western Australia.

3. **Revenue per Head.**—Details concerning the revenue per head of population, collected in the several States of the Commonwealth during the six years 1901-2 to 1906-7, are furnished in the table given hereunder. It will be seen that throughout the period Western Australia has collected by far the largest amount per head, and that Tasmania has collected the least:—

STATE REVENUE PER HEAD OF POPULATION, 1901-2 TO 1906-7.

Year.	N.S.W.			Victoria.			Q'land.			S. Aust.			W. Aust.			Tasmania.			All States.		
	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
1901-2 ...	8	0	1	5	15	7	6	19	9	6	15	6	17	5	7	4	16	3	7	7	5
1902-3 ...	8	1	0	5	14	10	6	18	1	6	18	0	17	0	4	4	5	0	7	8	6
1903-4 ...	7	17	7	6	1	1	6	19	6	6	19	3	15	12	10	4	16	11	7	8	5
1904-5 ...	7	15	7	6	4	2	6	17	10	7	10	2	14	18	5	4	14	8	7	9	2
1905-6 ...	8	4	8	6	8	2	7	5	11	7	11	6	13	19	4	4	19	6	7	14	4
1906-7 ...	8	15	5	6	15	6	8	1	0	8	9	6	12	19	11	5	7	9	8	3	6

In all the States, except Western Australia, the last two years have witnessed a marked increase in the State revenue collections per head, the most noticeable advance being that of £1 3s. 2d. per head in the case of Queensland. The Western Australian decline has been continuous, but even for 1906-7 the revenue per head in that State exceeded the Commonwealth average by nearly 59 per cent. Three States, viz., Western Australia, New South Wales, and South Australia, exceeded the Commonwealth average for 1906-7, while the other three States fell short of it.

4. **Details for 1906-7.**—Classifying the revenue of the several States in the manner indicated in § 2 (A) 1 above, particulars for the year 1906-7 are as follows:—

DETAILS OF STATE REVENUE, 1906-7.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Total.
	£	£	£	£	£	£	£
Taxation	1,381,306	1,110,411	540,737	411,867	266,152	276,450	3,986,922
Public Works & Services	6,780,326	4,191,784	1,892,598	1,846,481	1,924,617	308,078	16,943,884
Land	1,880,812	321,833	617,770	239,045	244,212	81,857	3,385,529
Surplus C'w'lth Revenue	3,022,351	2,192,340	942,569	645,121	780,166	262,293	7,844,840
Miscellaneous	327,641	529,166	314,238	110,191	186,207	42,165	1,509,608
Total	13,392,435	8,345,534	4,307,912	3,252,705	3,401,354	970,843	33,670,783

5. **Revenue per Head, 1906-7.**—Particulars concerning the revenue per head of population in each State derived from the several sources enumerated in the preceding paragraph are given hereunder:—

STATE REVENUE PER HEAD, 1906-7.

Particulars.	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tas.	All States.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Taxation	0 18 1	0 18 0	1 0 2	1 1 6	1 0 4	1 10 9	0 19 4
Public Works & Services	4 8 10	3 8 1	3 10 9	4 16 2	7 7 1	1 14 2	4 2 4
Land	1 4 8	0 5 3	1 3 1	0 12 6	0 18 8	0 9 1	0 16 5
Surplus C'w'lth Revenue	1 19 7	1 15 7	1 15 3	1 13 7	2 19 7	1 9 1	1 18 1
Miscellaneous	0 4 3	0 8 7	0 11 9	0 5 9	0 14 3	0 4 8	0 7 4
Total	8 15 5	6 15 6	8 1 0	8 9 6	12 19 11	5 7 9	8 3 6

The largeness of the revenue per head from public works and services in the case of Western Australia is mainly due to the fact that the number of miles of railway in that State is large compared with the population, and that the revenue-earning power of the railways is also high.

6. **Relative Importance of Sources of Revenue.**—The following table furnishes an indication of the relative importance of the different sources of revenue in the several States, the figures given being the percentage which each item of revenue bore to the total for the State for the year 1906-7:—

PERCENTAGE ON TOTAL STATE REVENUE, 1906-7.

Particulars.	N.S.W.	Vic.	Qld.	S. Aust.	W. Aust.	Tas.	All States.
	%	%	%	%	%	%	%
Taxation	10.31	13.31	12.55	12.66	7.83	28.48	11.84
Public Works and Services ...	50.63	50.23	43.93	56.77	56.58	31.73	50.32
Land	14.04	3.85	14.34	7.35	7.18	8.43	10.06
Surplus C'wealth Revenue ...	22.57	26.27	21.88	19.83	22.94	27.02	23.30
Miscellaneous	2.45	6.34	7.30	3.39	5.47	4.34	4.48
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00

One of the most noticeable features of the figures here given is the low percentage for "public works and services" and the high percentage for "taxation" in the case of Tasmania. In New South Wales and Queensland land revenue is an important item, while in Queensland the revenue from "public works and services" falls considerably below the Commonwealth average.

7. **State Taxation.**—(*a*) *Details, 1906-7.* Prior to the inauguration of Federation the principal source of revenue from taxation was the imposition of duties of Customs and Excise. At the present time the most productive form of State taxation is the income tax, which is now imposed in all the States, Western Australia, the last of the States to adopt this method of taxation, having passed the necessary legislation during the Parliamentary session of 1907. Stamp duties rank next to the income tax in importance. For 1906-7 probate and succession duties occupied third place. In addition to these a land tax is now collected in all the States except Queensland, and license fees of various kinds are collected in all the States, while a dividend tax is collected in Western Australia, and an "ability" tax[1] in Tasmania. The total revenue from taxation collected by the States during the year 1906-7 was £3,986,922, details of which are set forth in the table given hereunder:—

STATE REVENUE FROM TAXATION, 1906-7.

Taxation.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. A.	Tas.	All States
	£	£	£	£	£	£	£
Probate and succession duties ...	289,901	401,631	71,399	60,204	34,309	26,602	884,046
Other stamp duties	343,666	240,373	119,897	75,084	63,634	57,198	899,302
Land tax	345,497	92,438	...	90,200	...	56,065	584,200
Income tax	283,422	355,148	284,476	166 582	...	83,992	1,173,620
Dividend tax	...	...	...	...	116,916	...	116,916
Ability tax	...	...	...	...	...	32,957	32,967
Licenses	118,819	19,043	54,791	19,847	43,511	15,188	271,199
Other taxation	...	1,778	10,674	...	7,782	4,448	24,682
Total	1,381,305	1,110,411	540,737	411,867	266,152	276,450	3,986,922

The most productive forms of taxation in the several States during the year 1906-7 were as follows:—New South Wales, land tax; Victoria, probate and succession duties; Queensland, South Australia, and Tasmania, income tax; and Western Australia, dividend tax. Land and income taxes are now levied in Western Australia, but are not shewn in the above table, as they came into force after the close of the financial year 1906-7.

(*b*) *Summary, 1901-2 to 1906-7.* The total amount raised by means of taxation by the several State Governments during the six years 1901-2 to 1906-7 is given in the following table:—

STATE REVENUE FROM TAXATION, 1901-2 TO 1906-7.

Year.	New South Wales.	Victoria.	Queensland.	S. Australia.	W. Aust.	Tasmania.	All States.
	£	£	£	£	£	£	£
1901-2	1,108,770	748,216	276,771	267,791	173,582	111,515	2,686,645
1902-3	1,108,781	878,591	415,688	398,941	221,247	105,402	3,128,650
1903-4	1,100,193	938,147	475,184	353,432	235,114	150,091	3,252,161
1904-5	1,114,408	897,870	454,574	442,030	221,738	216,953	3,347,573
1905-6	1,297,776	990,735	494,165	369,756	260,609	248,799	3,661,840
1906-7	1,381,305	1,110,411	540,737	411,867	266,152	276,450	3,986,922

During the five years between 1901-2 and 1906-7 the aggregate State revenue from taxation increased by 48 per cent., the increase varying considerably in the several States. Thus while New South Wales shewed an increase of 25 per cent. and Victoria one of 48 per cent.. the Queensland revenue advanced by 95 per cent., and that of Tasmania by no less than 148 per cent.

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[1] The "ability" tax is based upon the annual value of the house occupied by the taxpayer, or upon the amount payable by him for board and lodging.

The revenue from State taxation per head of population, collected in the several States during each of the years 1901-2 to 1906-7, was as follows:—

STATE TAXATION PER HEAD, 1901-2 TO 1906-7.

Year.	New South Wales.	Victoria.	Queensland.	S. Australia.	W. Aust.	Tasmania.	All States.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1901-2	0 16 1	0 12 4	0 10 11	0 14 8	0 17 11	0 13 0	0 14 1
1902-3	0 15 10	0 14 6	0 16 3	1 1 9	1 0 9	0 12 2	0 16 1
1903-4	0 15 5	0 15 6	0 18 5	0 19 2	1 0 9	0 17 0	0 16 7
1904-5	0 15 4	0 14 10	0 17 5	1 3 9	0 18 4	1 4 1	0 16 10
1905-6	0 17 5	0 16 3	0 18 9	0 19 7	1 0 5	1 7 6	0 18 1
1906-7	0 18 1	0 18 0	1 0 2	1 1 6	1 0 4	1 10 9	0 19 4

Taking the States as a whole the State taxation increased by five shillings and three pence per head during the five years from 1901-2 to 1906-7, the most marked increase being that of seventeen shillings and eightpence per head in the case of Tasmania. In Queensland the increase amounted to nine shillings and fourpence, in South Australia to six shillings and tenpence, in Victoria to five shillings and eightpence, in Western Australia to two shillings and fivepence, and in New South Wales to two shillings. State taxation per head is at present highest in Tasmania and lowest in Victoria.

8. **Commonwealth and State Taxation.**—For the purpose of obtaining an accurate view of the extent of taxation imposed on the people of the Commonwealth by the central governing authorities it is necessary to add together the Commonwealth and State collections. This has been done in the table given hereunder, which contains particulars concerning the total taxation for each of the years 1901-2 to 1906-7, as well as the amount per head of population:—

COMMONWEALTH AND STATE TAXATION, 1901-2 TO 1906-7.

Particulars.	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.
	£	£	£	£	£	£
Commonwealth taxation ...	8,894,319	9,685.055	9,105,758	8.799,530	8,999,485	9,648,556
State taxation	2,686,645	3,128.650	3,252,161	3.347,573	3,661,840	3,986.922
Total	11,580,964	12,813,705	12,357,919	12,147,103	12,661,325	13,635,478
Taxation per head ...	£3 0 6	£3 6 0	£3 2 11	£3 1 0	£3 2 6	£3 6 2

Whilst the Commonwealth taxation increased during the five years by £754,237, the State taxation advanced by no less a sum than £1,300,277, the aggregate increase being £2,051,514. The amount has, however, fluctuated considerably during the period, and the total taxation per head for the year 1906-7 was practically identical with that for 1902-3.

9. **Public Works and Services.**—A very large proportion of the revenue of all the States of the Commonwealth is made up of the receipts from the various public works and services under the control of the several Governments. The principal of these are railways and tramways, harbour works, and water supply and sewerage, while in addition, State batteries for the treatment of auriferous ores exist in Western Australia, and various minor revenue-producing services are rendered by the Governments of all the States. For the year 1906-7 the aggregate revenue from this source totalled £16,943,884, or more than 50 per cent. of the revenue from all sources. Details of revenue from public works and services for the year 1906-7 are as follows:—

STATE REVENUE FROM PUBLIC WORKS AND SERVICES, 1906-7.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
Railways and tramways ...	5,596,428	4,010,546	1,821,946	1,567,038	1,559,188	257,715	14,812,861
Harbour services	392,146	90,118	25,570	44,649	70,576	...	623,059
Public batteries	...	...	...	...	87,540	...	87,540
Water supply and sewerage	555,221	88,847	...	123,720	116,020	...	883,808
Other public services ...	236,531	2,273	45,082	111,074	91,293	50,363	536,616
Total	6,780,326	4,191,784	1,892,598	1,846,481	1,924,617	308,078	16,943,884

10. **Land Revenue.**—The revenue derived by the States from the sale and rental of Crown lands has, with few exceptions, been treated from the earliest times as forming part of their respective Consolidated Revenue Funds, and has been applied to meet ordinary current expenses. Where the rentals received are for lands held for pastoral or for residential purposes, such application of the revenue appears perfectly justifiable. On the other hand, where the rentals are those of mineral and timber lands, and in all cases of sales of lands, such a proceeding is essentially a disposal of capital in order to defray current expenses. As a matter of financial procedure such a course is open to a very obvious criticism. In the following table particulars of revenue derived from sales and rental of Crown lands are given for the year 1906-7. These figures are those furnished by the several States, but do not in all cases represent a correct analysis of the revenue, owing to the fact that certain of the States include as rentals moneys received in respect of land purchased under systems of deferred payments, such moneys being more correctly classifiable as the proceeds of sales than as rentals:—

STATE LAND REVENUE, 1906-7.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£	£	£	£	£	£	£
Sales ...	1,029,439	203,849	175,418	100,390	136,248	48,375	1,693,719
Rentals ...	851,373	117,984	442,352	138,655	107,964	33,482	1,691,810
Total ...	1,880,812	321,833	617,770	239,045	244,212	81,857	3,385,529

11. **Surplus Commonwealth Revenue.**—The payments to the States of surplus Commonwealth revenue represent in each instance a considerable proportion of the State's revenue, and for the year 1906-7 aggregated £7,844,840. The percentage which the surplus revenue paid to each State for 1906-7 was of the total collected by the Commonwealth in respect of that State is shewn in the following table:—

SURPLUS COMMONWEALTH REVENUE PAID TO STATES FOR 1906-7.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Total.
	£	£	£	£	£	£	£
Surplus Commonwealth revenue paid to each State ...	3,022,351	2,192,340	942,569	645,121	780,166	262,293	7,844,840
Total Commonwealth revenue in respect of each State	4,782,122	3,537,602	1,707,136	1,113,450	1,216,416	476,165	12,832,891
	%	%	%	%	%	%	%
Percentage of surplus on total revenue	63.20	61.97	55.21	57.94	64.14	55.08	61.13

It will be seen from the foregoing table that the surplus Commonwealth revenue which the States received for 1906-7 represented rather more than 61 per cent. of the total Commonwealth collections for that year, the balance, 39 per cent., being absorbed in defraying the expenses of the various transferred and new departments under the control of the Commonwealth Government. The largest percentage returned was 64 per cent., in the case of Western Australia, and the smallest 55 per cent., in the case of Tasmania. The percentage of Victoria differed but slightly from that for the whole Commonwealth.

12. **Miscellaneous Items of Revenue.**—In addition to the foregoing sources of revenue there are in each State several miscellaneous ones, including such items as interest, fines, fees, etc., which for the year 1906-7 aggregated £1,509,608.

(B) Disbursements.

1. **Heads of Expenditure.**—The principal heads of State expenditure from Consolidated Revenue Funds are :—

(*a*) Interest and sinking funds in connection with public debt.
(*b*) Working expenses of railways and tramways.
(*c*) Other public works.
(d) Police.
(*e*) Education.
(*f*) Medical and charitable.
(*g*) Miscellaneous heads.

Of these items that of interest and sinking fund in connection with public debt is the most important, and for the year 1906-7 represented about 30 per cent. of the aggregate State expenditure from Consolidated Revenue Funds. Next in order for that year was the item of working expenses of railways and tramways, then education, public works, medical and charitable, and police in the order named.

2. **Total Expenditure.**—The total expenditure from Consolidated Revenue Funds in the several States during each of the years 1901-2 to 1906-7 is furnished in the table given hereunder :—

STATE EXPENDITURE FROM CONSOLIDATED REVENUE FUNDS,
1901-2 TO 1906-7.

Year.	N.S. Wales.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
1901-2 ...	11,020,105	7,398,832	3,967,001	2,823,578	3,151,427	870,442	29,231,385
1902-3 ...	11,467,235	6,759,960	3,717,806	2,641,789	3,521,763	850,685	28,959,238
1903-4 ...	11,319,888	7,339,608	3,607,864	2,707,254	3,698,312	879,356	29,552,282
1904-5 ...	11,195,075	7,343,742	3,581,403	3,710,369	3,745,224	840,184	30,415,997
1905-6 ...	11,386,864	7,261,475	3,725,712	3,005,499	3,632,318	853,147	29,865,015
1906-7 ...	11,881,746	7,679,143	3,911,797	3,396,499	3,490,182	913,762	31,273,129

As in the case of the table previously given for revenue, the above figures relate to the year ended 30th June, except in the cases of 1901-2, 1902-3, 1903-4, which contain Tasmanian figures for the years ended 31st December, 1901, 1902, and 1903 respectively.

3. **Expenditure per Head.**—Owing to the varying conditions of the several States and the extent to which the different functions of Government are distributed therein between central and local governing authorities, the expenditure per head from Consolidated Revenue Funds differs materially in the several States, being highest in the case of Western Australia and lowest in that of Tasmania. Two of the States, viz., Western Australia and New South Wales, are above the Commonwealth average per head, and the other four States below. The expenditure per head of population for each State for the years 1901-2 to 1906-7 is as follows:—

STATE EXPENDITURE PER HEAD, 1901-2 TO 1906-7.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1901-2 ...	8 0 3	6 2 2	7 16 10	7 14 5	16 4 8	5 1 5	7 12 10
1902-3 ...	8 3 5	5 11 7	7 5 7	7 4 1	16 10 2	4 18 5	7 9 2
1903-4 ...	7 18 7	6 1 5	7 0 0	7 6 10	16 5 11	4 19 5	7 10 6
1904-5 ...	7 13 8	6 1 4	6 17 4	9 19 1	15 9 2	4 13 3	7 12 8
1905-6 ...	7 12 8	5 19 2	7 1 1	7 18 11	14 5 1	4 14 3	7 7 5
1906-7 ...	7 15 8	6 4 8	7 6 2	8 17 0	13 6 8	5 1 5	7 11 10

In New South Wales, Queensland, and Western Australia decreases in the expenditure per head took place, while in Victoria and South Australia increases were experienced. In the case of Tasmania the expenditure per head in 1906-7 was identical with that in 1901-2.

4. **Details of Expenditure for 1906-7.**—The following table furnishes for the year 1906-7 particulars as to the expenditure of the several States under each of the principal heads:—

DETAILS OF STATE EXPENDITURE, 1906-7.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
Public debt (int. and sinking fund)	3,397,618	2,065,844	1,546,881	1,498,137	864,965	393,821	9;767,266
Rlwys. & trmwys. (working exps.)...	3,221,145	2,159,577	910,638	867,184	1,161,338	185,750	8,505,632
Other public works	399,851	560,231	63,291	164,249	192,977	18,008	1,398,607
Police	427,154	276,957	180,994	84,315	124,543	34,523	1,128,486
Education	1,001,273	698,784	351,548	185,789	182,778	68,777	2,488,944
Medical and charitable	466,872	324,374	220,372	110,500	153,490	49,113	1,324,730
Miscellaneous	2,967,833	1,598,376	638,073	486,316	810,096	163,770	6,664,464
Total	11,881,746	7,679,143	3,911,797	3,396,499	3,490,182	913,762	31,273,129

5. **Expenditure per Head, 1906-7.**—The expenditure per head of population of the several States for the year 1906-7, under each of the principal items, is given hereunder:—

STATE EXPENDITURE PER HEAD, 1906-7.

Particulars	N.S.W	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Public debt, interest and sinking fund	2 4 6	1 13 6	2 17 10	3 18 1	3 6 1	2 8 9	2 7 5
Railways and tramways (working expenses) ...	2 2 3	1 15 1	1 14 0	2 5 2	4 8 9	1 0 7	2 1 4
Other public works	0 5 3	0 9 1	0 2 5	0 8 7	0 14 9	0 1 5	0 6 9
Police	0 5 7	0 4 6	0 6 9	0 4 5	0 9 6	0 3 10	0 5 6
Education*	0 13 1	0 11 4	0 13 1	0 9 8	0 14 0	0 7 7	0 12 1
Medical and charitable ...	0 6 1	0 5 3	0 8 3	0 5 9	0 11 8	0 5 6	0 6 5
Miscellaneous	1 18 11	1 5 11	1 8 10	1 5 4	3 1 11	0 18 9	1 12 4
Total	7 15 8	6 4 8	7 6 2	8 17 0	13 6 8	5 1 5	7 11 10

* Including State schools, technical schools, State assistance to secondary education and universities.

In three of the States, viz., Western Australia, South Australia, and New South Wales, the average State expenditure per head exceeded that for the Commonwealth as a whole, falling short of it in the other three States.

6. **Relative Importance.**—The relative importance of the items of expenditure enumerated above varies considerably in the several States. This will readily be seen from the following table, giving for each State the percentage of the expenditure under the various items, on the total expenditure for the State:—

PERCENTAGE ON TOTAL STATE EXPENDITURE, 1906-7.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	%	%	%	%	%	%	%
Public Debt (interest and sinking fund)	28.60	26.90	39.54	44.11	24.78	43.10	31.23
Railways and tramways (working expenses) ...	27.11	28.12	23.28	25.58	33.27	20.33	27.20
Other public works	3.36	7.30	1.62	4·84	5.53	1.42	4.45
Police	3.59	3.61	4.63	2.48	3.57	3.78	3.61
Education	8.48	9.10	8.99	5.47	5.24	7.53	7.96
Medical and charitable ...	3.93	4.22	5.63	3.25	4.40	5.37	4.24
Miscellaneous	24.93	20.75	16.31	14.32	23.21	18.47	21.31
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Taken together, the interest and sinking fund on the public debt, and the working expenses of the railways and tramways, represented for the year 1906-7 nearly 58½ per cent. of the aggregate State expenditure.

(C) Balances.

1. **Position on 30th June, 1907.**—On various occasions in each of the States the revenue collected for a financial year has failed to provide the funds requisite for defraying the expenditure incurred during that year, the consequence being a deficit which is usually liquidated either by cash obtained from trust funds, or by the issue of Treasury bills. In some of the States a number of such deficits have occurred, interspersed with occasional surpluses, the result being an accumulating overdraft, which in certain instances assumed very large proportions. Thus during the period of financial stress resultant upon the crisis of 1893 and the drought conditions of succeeding years, the accumulated overdrafts of several of the States grew very rapidly. The very favourable financial conditions of recent years have enabled the various Treasurers to considerably reduce such liabilities from time to time, and at 30th June, 1907, the position of the balances of the several Consolidated Revenue Funds were as set forth in the table hereunder :—

STATE CONSOLIDATED REVENUE FUND BALANCES, 30TH JUNE, 1907.

State.	Cash Credit Balances.	Debit Balance.		Net Result.	
		Cash Overdraft.	Overdraft liquidated by Treasury Bills		
	£	£	£		£
New South Wales	1,471,344	...	1,561,632	Dr.	90,288
Victoria	...	891,868	...	Dr.	891,868
Queensland	396,115	...	...	Cr.	396,115
South Australia	*297,673	†143,793	...	Cr.	153,880
Western Australia	...	208,729	...	Dr.	208,729
Tasmania	...	...	112,393	Dr.	112,393
Total	2,165,182	1,244,390	1,674,025	Dr.	753,233

* South Australia proper. † Northern Territory.

(D) Principal State Taxes.

(a) Probate and Succession Duties.

1. **General.**—Excepting in Western Australia, probate duties have been levied for a considerable time in each State. In the State mentioned such taxation originated in 1895, under the Duties on Deceased Persons' Estates Act. From the provisions of the several State Acts governing the payment of duty which are outlined hereunder, it will be seen that both the ordinary rates and those which apply to special beneficiaries differ

widely in several cases. In the following table the amount under which the estates of deceased persons were sworn, is shewn for the years 1901 to 1906:—

VALUE OF ESTATES OF DECEASED PERSONS, 1901 TO 1906.

State.	1901.	1902.	1903.	1904.	1905	1906.
	£	£	£	£	£	£
New South Wales	7,033,459	5,807,620	7,179,882	6,155,963	7,714,416	7,529,437
Victoria ...	6,527,235	7,571,482	6,074,077	5,762,084	6,003,478	6,424,738
Queensland ...	1,123,391	932,854	2,617,348	1,513,237	1,016,495	1,144,116
South Australia ...	1,457,376	1,790,102	2,464,011	2,056,612	1,294,968	2,041,280
Western Australia	615,729	488,057	703,071	422,515	676,920	544,245
Tasmania ...	402,157	299,408	253,167	905,254	504,196	862,222
Commonwealth ...	17,159,347	16,889,523	19,291,556	16,815,665	17,210,473	18,546,038

The duty collected in the several States for the financial years 1901-2 to 1906-7 is as follows:—

AMOUNT OF PROBATE AND SUCCESSION DUTIES COLLECTED, 1901-2 TO 1906-7.

State.	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.
	£	£	£	£	£	£
New South Wales	254,894	237,127	219,321	209,822	290,729	289,901
Victoria ...	217,796	161,686	308,531	265,876	328,628	401,631
Queensland* ...	47,933	34,988	94,910	62,636	67,935	71,399
South Australia ...	61,106	104,028	72,926	109,427	59,970	60,204
Western Australia	13,624	8,952	21,759	10,587	15,707	34,309
Tasmania ...	†8,629	†6,980	†4,750	16,658	26,336	26,602
Commonwealth ...	603,982	553,711	722,197	675,006	789,805	884,046

* Approximate. † Calendar years 1901, 1902, and 1903 respectively.

2. New South Wales.—(i.) *Legislation.* The Acts relative to probate and succession duties at present in force in New South Wales in chronological order are:—

(*a*) Wills, Probate and Administration Act 1898.
(*b*) Stamp Duties Act 1898.
(*c*) Probate Duties (Amendment) Act 1899.
(*d*) Administration (Validating) Act 1900.
(*e*) Stamp Duties Amendment Act 1904.
(*f*) Administration Amending Act 1906.

The first-named Act, assented to on 27th July, 1898, repealed, amongst others, the Probate Act of 1890 (two sections excepted), and also the Probate Amendment Act of the same year. On the same day, 27th July, assent was also given to the Stamp Duties Act, the rates of duty contained in which were in force until the passing of the Probate Duties (Amendment) Act on 22nd December, 1899, when its schedule was repealed and a new rate of duty was imposed.

The Administration (Validating) Act of 1900 was passed in order to validate certain orders of the Supreme Court giving power or leave to sell, mortgage or lease, the real estate of deceased persons.

(ii.) *Rates of Duty.* In lieu of the duties payable on probate and letters of administration as provided for by the Stamp Duties Act of 1898, the following rates are now payable on the total value of the estate of a deceased person after the deduction of all debts, as enacted by the Amending Act of 1899, viz.—Up to £1000, nil; above £1000 and up to £5000, 2 per cent.; then up to £6000, 3 per cent.; then increasing ⅕ per cent. for each £1000 up to £10,000, for each £2000 up to £40,000, and for each £4000 up to £100,000, the last group, £96,000 to £100,000, being subject to 9⅘ per cent. Above £100,000 the duty is 10 per cent. Property left by the deceased to his widow or children is subject to half the foregoing rates, if the total value of the estate, after the deduction of all debts, does not exceed £50,000.

3. **Victoria.**—(i.) *Legislation.* The subjoined list of Acts regulate the Probate and succession duties of Victoria:—

(*a*) No. 1060, Administration and Probate Act 1890, with its amendments, No. 1238 of 1891, 1261 of 1892, 1599 of 1898, 1815 of 1903, and 2120 of 1907.
(*b*) No. 1419, Intestate Estates Act 1896.
(*c*) No. 1827, Probate Charges Act 1903, and its amendment No. 1970 of 1905.
(*d*) No. 1862, Administration and Probate Duties Act 1903, with its amendments, No. 1935 of 1904, 1984 of 1905, 2032 of 1906, and 2089 of 1907.

The principal Act, the Administration and Probate Act 1890, was assented to on 10th July, 1890, and came into force on 1st August of the same year. It repealed Acts Nos. 338, 403, 427, 523, 900, 928, 1035 and 1053, and enacted a scale of duties which was enforced until 1st January, 1903, when the Administration and Probate Act of 1903 came into force.

(ii.) *Rates of Duty.* The last-mentioned Act provides for the following scale of duties, as amended by Act No. 1862, on the estate, real and personal, of deceased persons, after the deduction of all debts, viz.:—Less than £200, nil; above £200 and up to £300, 1½ per cent.; then increasing ½ per cent. for each £100 up to £600; then increasing ⅓ per cent. for each £200 up to £1000; above £1000 and up to £1500, 4 per cent.; then increasing ¼ per cent. for each £500 up to £6000; then increasing ⅕ per cent. for each £1000 up to £19,000; over £19,000 and up to £20,000, 9½ per cent.; and over £20,000, 10 per cent. is charged.

The rates of duty as shewn above also apply to all settlements of property, both real and personal, where the person taking the property is a brother or sister, or descendant of a brother or sister, or by any other person in any other degree of collateral consanguinity to the settlor, but duty at the rate of 10 per cent. is payable on the value of property taken by a stranger in blood to the settlor or donor.

(iii.) *Special Rates.* Property left by the deceased to his widow, children, or grandchildren, is subject to the following rates, except that in cases where the total value of the estate after payment of all debts does not exceed £2000 half these rates only are charged:—Up to £500, nil; over £500 and up to £1000, 1 per cent.; over £1000 and up to £2000, 3 per cent.; then increasing by ⅓ per cent. for each £1000 up to £5000, and by ¼ per cent. for each £1000 up to £8000; over £8000 and up to £10.000, 5 per cent; increasing then by ⅕ per cent. for each £2000 up to £24,000, for each £4000 up to £80,000, and for each £5000 up to £100,000, the last group £95.000 to £100,000 being subject to 9⅘ per cent.; over £100,000, the amount payable is 10 per cent.

4. **Queensland.**—(i.) *Legislation.* The collection of probate and succession duties in Queensland is governed by the following Acts:—

(*a*) The Succession and Probate Duties Act 1892.
(*b*) The Succession Act Amendment Act 1895.
(*c*) The Succession and Probate Duties Amendment Act 1895.
(*d*) The Succession and Probate Duties Act 1904.
(*e*) The Succession Act 1906.
(*f*) The Succession and Probate Amendment Act 1906.

The principal Act, the Succession and Probate Duties Act of 1892, which was assented to on 4th October, 1892, and taken as coming into force on 7th September previous, repealed the Succession Duties Act of 1886, and enacted a scale of duties which is still levied.

(ii.) *Rates of Succession Duty.* If the whole succession or successions derived from the same predecessor, and passing upon death to any person, amount in money or principal value to less than £200, no duty is payable; where the value is £200 and less than £1000, 2 per cent. is due; £1000 and less than £2500, 3 per cent.; £2500 and less than £5000, 4 per cent.; £5000 and less than £10,000, 6 per cent.; £10,000 and less than £20,000, 8 per cent.; and when the value is £20,000 or upwards, 10 per cent. is charged.

(iii.) *Special Rates.* Duty at one-half of the above rates is payable when the successor is the wife or husband, or the lineal issue of the predecessor; and at double the rates if the successor is a stranger in blood to the settlor.

(iv.) *Probate and Administration.* In addition to the foregoing succession duties a probate duty of 1 per cent. is payable on all estates having a net value of £300 or over. When the net value of the property of a deceased person does not amount to £300 it is exempt from duty, and when the value is £300 or over, duty at the rate of £1 for every £100 or part thereof is payable.

(v.) *Exemptions.* Successions the total value of which is less than £20, and bequests for educational and charitable purposes in Queensland, are exempt from taxation.

5. **South Australia.**—(i.) *Legislation.* Under the four Acts given hereunder the Probate and Succession duties are collected in South Australia:—

(*a*) No. 537, The Administration and Probate Act 1891.
(*b*) No. 567, The Succession Duties Act 1893.
(*c*) No. 819, The Administration and Probate Act 1903.
(*d*) No. 854, The Administration and Probate Amendment Act 1904.

On 25th October, 1893, the Succession Duties Act was assented to, and by it the Probate and Succession Duty Act of 1876, and its two amendments, Nos. 225 of 1881 and 361 of 1885, were repealed.

(ii.) *Rates of Duty.* On the property derived by any beneficiary the duties are assessed on the net value, and the following scale applies where the person taking the property is the widow, widower, descendant or ancestor of the deceased; and likewise where the property is given or accrues to any of the above-mentioned persons under a settlement or deed of gift:—Under £500, *nil*; over £500 and up to £700, 1½ per cent.; over £700 and up to £1000, 2 per cent.; over £1000 and up to £2000, 3 per cent.; over £2000 and up to £3000, 3½ per cent.; increasing then by ½ per cent. for each £2000 up to £7000; over £7000 and up to £10,000, 5 per cent.; increasing then by ½ per cent. for each £5000 up to £20,000, for each £10,000 up to £40,000, for each £20,000 up to £100,000, and for each £50,000 up to £200,000, the duty from £150,000 to £200,000 being 9½ per cent.; above £200,000 the duty is 10 per cent.

Where the person taking the property is a brother, sister, descendant of a brother or sister, or any person in any other degree of collateral consanguinity to the deceased person, or where the property is given or accrues to any of the aforesaid persons under a settlement or deed of gift, the duty is reckoned on the net present value of such property, and is payable at the rates shewn hereunder:—Under £200, 1 per cent.; up to £300, 1½ per cent.; up to £400, 2 per cent.; up to £700, 3 per cent.; up to £1000, 3½ per cent.; up to £2000, 4 per cent., then increasing 1 per cent. up to each of the following amounts:—£3000, £5000, £10,000, £15,000, and £20,000; above £20,000 10 per cent. is payable.

If the person taking the property, either by will or under a settlement or deed of gift, is a stranger in blood to the deceased or the settlor or donor, as the case may be, duty is charged at the rate of 10 per cent. on the net present value of the property.

(iii.) *Special Rates.* Duty at one-half the rates shewn above is levied when the person who takes is the child under twenty-one years of age or the widow of the deceased or the settlor or donor, provided that the net value of the whole estate be under £2000.

6. **Western Australia.**—(i.) *Legislation.* The only Act relating to probate and succession duties at present in force in Western Australia is the Administration Act of 1903, which was assented to on 31st December, 1903. It repealed a number of Acts, including the Real Estates Administration Act 1893 and the Duties on Deceased Persons' Estates Act 1895, and levied a new scale of duties.

(ii.) *Rates of Duty.* When the total value of the estate, real or personal, of a deceased person, or of the property given or accruing to any person under a settlement or deed of gift, does not, after the deduction of all debts, exceed £1000, duty is payable at the rate of 1 per cent.; where the value exceeds £1000 and does not exceed £3500, 2 per cent. is charged; £3500 and under £5000, 3 per cent.; £5000 and under £7500, 4 per cent.; £7500 and under £10,000, 5 per cent.; £10,000 and under £15,000, 6 per cent.; £15,000 and under £20,000, 7 per cent.; £20,000 and under £30,000, 8 per cent.; £30,000 and under £50,000, 9 per cent.; £50,000 and over, 10 per cent.

7. **Tasmania.**—(i.) *Legislation.* The duties imposed in connection with Probate and letters of administration in Tasmania are provided for by the following Acts:—

(*a*) The Deceased Persons' Estates Act of 1874 and 1881.
(*b*) The Probate (Foreign) Act 1893.
(*c*) The Probate Act 1893, with amendment in 1906.
(*d*) The Deceased Persons' Estate Management Act 1903.
(*e*) The Deceased Persons' Estates Duties Act 1904.

The Probate Duties Act, of 1868, levied a scale of rates which remained in force until the passing of the Deceased Persons' Estates Duties Act in 1904, when the former Act was repealed and a new schedule came into operation,

(ii.) *Rates of Duty.* Duty at the rates given below is payable on the property derived from a deceased person, or comprised in a settlement or deed of gift in so far as it includes, or is a portion of—

(*a*) His real and personal property in Tasmania, including that over which he had a general power of appointment, exercised by his will, or by the settlement or deed of gift, if the deceased was. at the time of his death, domiciled in Tasmania.
(*b*) His personal property, as above, including all debts, money, etc., recoverable in action by the executor in Tasmania, if the deceased was, at time of death, domiciled elsewhere than in Tasmania; and
(*c*) Property accruing to any husband by virtue of his right as husband on the decease of his wife.

When the value of the property of the deceased person, settlor, or donor, as the case may be, at the time of his death exceeds £500, and does not exceed £1000, 2 per cent. is payable; exceeding £1000 and not exceeding £2000, 2½ per cent.; £2000 and not over £5000, 3 per cent.; £5000 and not over £20,000, 4 per cent.; £20,000 and not over £100,000, 5 per cent.; and over £100,000, 10 per cent.

(iii.) *Special Rates.* Double the above rates are charged when the property is derived by, or given or accrues to a brother or sister, or the child of a brother or sister of the deceased person, settlor, or donor, but in no case is a duty of more than 10 per cent. payable. When the property is derived by a stranger in blood to the deceased person, settlor, or donor, or accrues to any collateral relation beyond the third degree, the duty is 10 per cent. on the value of the property of any value whatever. No duty is payable in respect of any money which is payable to any person by a friendly society upon the death of a member or his wife or child.

(*b*) Stamp Duties.

1. **Legislation in the Several States.**—The principal Acts at present in force in the several States relating to stamp duties are as follows:—

(*a*) *New South Wales.* Stamp Duties Act 1878, with amendments in 1900, 1904, and 1907.
(*b*) *Victoria.* Stamps Act 1890, with amendments in 1892, 1900, and 1904.
(*c*) *Queensland.* Stamp Act 1894, with amendment in 1904.
(*d*) *South Australia.* Stamp Act 1886, with amendment in 1902.
(*e*) *Western Australia.* Stamp Act 1882, with amendments in 1905 and 1906.
(*f*) *Tasmania.* Stamp Duties Act 1882, with amendments in 1886, 1888, 1892, 1900 and 1904.

These Acts provide for the payment of duty on bank notes, bills of exchange, and promissory notes, deeds, leases, policies, receipts, transfers, and so forth, which are required to be stamped either by an impressed or adhesive stamp, as the case may be.

The revenue derived by the several States of the Commonwealth from the imposition of stamp duties for the years 1901-2 to 1906-7 is shewn in the accompanying table :—

STAMP REVENUE (EXCLUSIVE OF PROBATE AND SUCCESSION DUTIES) 1901-2 TO 1906-7.

State.	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.
	£	£	£	£	£	£
New South Wales	250,964	240,200	252,081	268,343	299,165	343,666
Victoria ...	195,015	192,071	194,172	199,690	222,697	240,373
Queensland ...	98,580	96,358	92,079	73,554	99,631	119,397
South Australia...	29,776	55,589	61,899	60,894	66,480	75,034
Western Australia	44,433	53,500	55,768	55,064	59,200	63,634
Tasmania ...	23,455[*]	27,364[*]	42,093[*]	46,048	54,080	57,198
Commonwealth	642,223	665,082	698,092	703,593	801,253	899,302

[*] Calendar years 1901, 1902, and 1903 respectively.

2. **Bank Notes.**—Promissory notes issued by any bank are not required to bear a duty stamp either impressed or adhesive, and may be reissued as often as thought fit. An annual composition has, however, to be paid in lieu of stamp duty. This composition is payable quarterly, and is the same in all States, being at the rate of £2 per annum on every £100 or part thereof of the average annual amount of bank notes in circulation. On 2nd June, 1893, the Treasury Notes Act of Queensland was assented to, by which the issue of Treasury notes payable on demand was authorised. These notes are now used exclusively by the banks in that State.

3. **Bills of Exchange and Promissory Notes.**—(i.) *Rates.* In all the States except New South Wales, when a bill of exchange or promissory note is payable on demand, the rate charged is one penny. When the bill was not payable on demand the duty levied in New South Wales, until the Amendment Act of 1907 came into force on 1st January, 1908, was sixpence for every £25 or part thereof, but under this Act no duty is now payable on bills of exchange or promissory notes in that State. The rate in Victoria is sixpence for every £25[*] up to £100, and one shilling for every £50 over £100. One shilling is charged in Queensland for every £50. For every £25 the duty in South Australia is sixpence if the bill is negotiable in the Commonwealth, but when a bill is drawn in South Australia and payable in any place beyond the Commonwealth, one shilling is charged for every £100, in which case an adhesive stamp only is to be used. In Western Australia, when the amount

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[*] "Or fractional part thereof" is to be understood after all amounts mentioned.

of the bill does not exceed £25 the duty payable is sixpence, when it exceeds £25 the duty is increased by sixpence for every £25 up to £100, and when it exceeds £100, one shilling for every £50 is charged. An amount of threepence is levied in Tasmania for a bill not exceeding £5; sixpence for one exceeding £5 and under £25; and an additional sixpence for every succeeding £25.

(ii.) *Exemptions.* The chief classes of bills which are exempt from taxation are Government debentures, Treasury notes, drafts on account of Public Service, drafts by banker on banker, letters of credit in the State, on His Majesty's Service, etc.

4. **Bills of Lading.**—(i.) *Rates.* The charge made for a bill of lading or copy thereof is sixpence in four of the States, viz., New South Wales, Victoria, South Australia, and Tasmania. In Queensland the rate is one shilling, and for a receipt of a bill of lading sixpence, whilst in Western Australia the duty is threepence if the goods do not exceed half a ton in weight or measurement, and sixpence if the goods exceed that quantity. The Acts provide that no bill of lading is to be stamped after its execution.

5. **Receipts.**—(i.) *Rates.* The duty payable on receipts given on payment of the amount of £2 or upwards in the States of Victoria, South Australia and Western Australia is one penny. Under the provisions of the Stamp Duties Act of 1898 the rate in New South Wales was twopence for £2 or over, but this was repealed by the Stamp Duties Amendment Act of 1907, and no duty is now payable on receipts in this State. Acknowledgments for payment of £1 or upwards were taxed one penny in Queensland under the 1894 Act, but by Amendment Acts of 1901, 1903 and 1904, the first two of which have since been repealed, it was provided that amounts of £1 and less than £2 were to be taxed one penny; £2 and less than £50, twopence; £50 and less than £100, threepence; and £100 or over, sixpence for every £100 or part thereof. By the 1904 Amendment Act of Tasmania, receipts for sums amounting to £2 and not over £5 are subject to a duty of one penny, and when the amount exceeds £5, one penny is charged for every additional £10 or part thereof, provided that the maximum duty on any receipt is fourpence.

(ii.) *Exemptions.* The exemptions from payment of duty on receipts vary considerably in the several States, and amongst others may be mentioned the following:—On His Majesty's Service, banker's receipt for bill of exchange or promissory note, current accounts, savings bank accounts, municipal rates, money orders and postal notes, wages received by labourers, workmen, menial servants, etc.

(*c*) Land Tax.

1. **General.**—Queensland is the only State in the Commonwealth in which a land tax is not levied, although it was not until as recently as 1907 that the first tax on land was imposed in Western Australia. In all of the other States the tax dates back to an earlier period.

The following table shews the amount collected by the States in which a land tax was imposed by such taxes during the financial years 1901-2 to 1906-7:—

LAND TAX COLLECTIONS, 1901-2 TO 1906-7.

State.	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.
	£	£	£	£	£	£
New South Wales	306,298	320,653	335,223	332,530	336,785	345,497
Victoria	97,862	92,867	106,445	97,840	103,536	92,438
South Australia	76,352	105,024	77,371	115,033	94,601	90,200
Tasmania	*42,209	*41,862	*50,881	54,151	54,776	56,065
Commonwealth ...	522,721	560,406	569,920	599,554	589,698	584,200

* Calendar years 1901, 1902, and 1903 respectively.

2. **New South Wales.**—(i.) *Legislation.* The following Acts relating to the levying, assessment, and collection of land tax are at present in force in New South Wales:—

(*a*) Land and Income Tax Assessment Act 1895, with amendments in 1896, 1897, 1898, and 1904.
(*b*) Land Tax Act 1895, with amendments in 1899, 1900, and 1902.
(*c*) Local Government Act 1906.

The principal Act, the Land and Income Tax Assessment Act of 1895, which was enacted for the purpose of establishing a system of direct taxation by means of a tax on land, as well as for other objects, was assented to on 12th December of that year. The Land Tax Act of 1895, assented to on the same day as the above-mentioned Act, provided for a tax which was amended in respect of certain leased lands by the amending Act of 1902, and suspended in cases, which will hereinafter be referred to, by the Local Government Act of 1906.

(ii.) *Rates.* Under the provisions of the principal Act a tax is levied on the unimproved value of all land after the deduction of £240, which deduction is only made once in the case of an owner of more estates than one. Land that is subject to mortgage is liable to a deduction each year from the tax on the unimproved value of a sum equal to the income tax leviable for that year on the interest derivable from the whole mortgage on the land, improvements included. A tax of one penny in the £ of the unimproved value was declared by the Land Tax Act of 1895. The Act of 1902, which only applies to land while it is subject to a lease from the owner which was current at the end of the year 1902, and of which not less than thirty years were at such time unexpired, and land that is subject to a lease from the owner made after the commencement of the Act for a term of not less than thirty years, provided for a similar tax to be paid conjointly by owners ond lessees, according to an adjustment made by the Commissioners. Under the Local Government Act of 1906 the operation of the land tax is suspended in the case where a shire or municipality has levied a tax on the unimproved capital value of the ratable land within its boundaries.

(iii.) *Exemptions.* Some of the principal lands on which no taxation is payable are as follows:—

(*a*) Crown lands which are not liable to right of purchase, and lands held by way of conditional or special lease and homestead selections under any Crown Lands Act.
(*b*) Lands vested in His Majesty or in any person for or on behalf of His Majesty.
(*c*) Lands vested in the Railway Commissioners.
(*d*) Public roads and thoroughfares; reserves for health, recreation or enjoyment, parks, cemeteries, etc.
(*e*) Lands occupied or used exclusively for public hospitals, benevolent and charitable institutions, churches, universities, affiliated colleges, mechanics' institutes, etc., and lands on which are erected public markets, town halls, etc., and land vested in any council, municipality, hospital, or affiliated college.
(*f*) Land vested in trustees for the use of agricultural, horticultural, pastoral or zoological show purposes.
(*g*) Land used exclusively for the site of a residence of a minister of religion ministering at some place of public worship, and land used as a site for a school attached to, or connected with, any place of public worship.

3. **Victoria.**—(i.) *Legislation.* The Land Tax Act of 1890 (No. 1107), which was assented to on 10th July, 1890, and which repealed the Act of 1877, is the only Act now in force in Victoria. Under this Act every "landed" estate, which is taken to mean land of upwards of 640 acres in extent, forming one area or separate areas not more than five miles apart and valued at over £2500, is subject to taxation.

(ii.) *Rates.* The owner of one or more "landed" estates is taxed every year at the rate of 1¼ per cent. on the capital value of his estate above the sum of £2500. The Act provides for the appointment of officers, whose duty it is to estimate the grazing capabilities of the land in every "landed" estate and to classify such under one of the following four divisions, viz.:—

(*a*) Land capable of carrying two or more sheep to the acre to be returned as first-class and valued at £4 per acre.
(*b*) Land carrying three sheep to two acres, and less than two sheep to the acre. . second-class, and valued at £3 per acre.
(*c*) Land carrying one sheep to the acre, and less than three sheep to two acres, third-class, and valued at £2 per acre.
(*d*) Land which is not capable of grazing one sheep to the acre, fourth-class, and valued at £1 per acre.

4. **South Australia.**—(i.) *Legislation.* The administration of the land tax in South Australia is governed by the following Acts:—

(*a*) Taxation Act 1884, with amendments in 1885, 1887, 1894, 1900, 1902, 1903, 1904, and 1905.
(*b*) Increase of Taxes Act 1902.

On 14th November, 1884, the principal Act, viz., the Taxation Act, was assented to. It provided for a tax to be paid on the unimproved value of any land in the State of South Australia, but the rate was increased by subsequent Acts, as will be shewn below.

(ii). *Rates.* The principal Act declared a tax of one half-penny for every £1 sterling in the amount of the taxable value, and the amending Act of 1894 imposed an additional tax of one half-penny for every £1 exceeding the amount of £5000 of the total assessed unimproved value owned by any party. Under the provisions of the Increase of Taxes Act of 1902 the general rate was augmented by one farthing in the £1, and a still further charge of one farthing was made by the 1904 amendment, making a total general rate now payable of one penny in the £1. The last-mentioned Act also increased by one farthing the tax payable on land valued over £5000, as provided in the Act of 1894, the present rate payable on property exceeding £5000 in value being, therefore, one penny three farthings for every £1 of the total assessed unimproved value over that amount. In addition to the taxes quoted above, a further tax of 20 per cent. is payable by absentees under the amendment of 1894. Under this Act absenteeism consisted of absence from the State of South Australia for the period of two years prior to the date on which the tax became due, but the duration of absence was reduced to twelve months by the amendment Act of 1904.

(iii.) *Exemptions.* The subjoined is a list of lands that are free from taxation:—

(*a*) Land of the Crown which, for the time being, is not subject to any agreement for sale or right of purchase.
(*b*) Park lands, public roads, cemeteries, and reserves.
(*c*) Land used solely for religious or charitable purposes, or by any public institute.

5. **Western Australia.**—(i.) *Legislation.* The Land and Income Tax Assessment Act of 1907—the first Act relating to the payment of a tax on land in Western Australia—was assented to on 20th December, and came into force on 1st January following. A tax on the unimproved value of land was imposed by the Land Tax and Income Tax Act, which received assent and came into force on the same day as the above-mentioned Act.

(ii.) *Rates.* A tax at the rate of one penny for every pound sterling of the unimproved value of land is charged, provided that the aggregate value of the land held exceeds £50. A rebate of one half of the tax levied is allowed to every owner of improved land.

(iii.) *Exemptions.* The lands specified below are exempt from assessment for taxation :—

(*a*) All lands owned by or on behalf of His Majesty.
(*b*) Public roads and thoroughfares, public reserves for health, recreation or enjoyment, and public parks, university endowments, cemeteries and commons.
(*c*) Lands used in connection with any public hospital, benevolent, charitable or religious institution, mechanics' institute, school of art, etc., and land on which is erected any State market, town hall, or municipal chambers.
(*d*) All lands held as mining tenements, and lands dedicated to, or vested in trustees, and used for zoological, agricultural, pastoral, or horticultural show purposes, or other public scientific purposes.
(*e*) Land, the unimproved value of which does not exceed £50.

6. **Tasmania.**—(i.) *Legislation.* The Land Tax Act of 1905, which was assented to on 30th September, and amended later on in the same year, consolidated the laws relating to land tax in Tasmania. It repealed the Act of 1888 (which was, until then, the principal Act), and also, its eight amendments.

(ii.) *Rates.* When the total value of all the land of any taxpayer is under £5000, the rate of tax on such total capital value is one-halfpenny in the £1 sterling; when the value is £5000 and under £15,000, five-eighths of a penny is payable ; £15,000 and under £40,000, three farthings ; £40,000 and under £80,000, seven-eighths of a penny ; and when the value is £80,000 and over, the rate charged is one penny in the £1 sterling. The owner of any land subject to mortgage, etc., may furnish to the Commissioner such particulars as may be required, and is entitled to deduct from the tax demanded of him. one-sixth of a penny for every £1 of the total amount advanced on such mortgage.

(iii.) *Exemptions.* The number of exemptions as contained in the principal Act is too lengthy to be given in detail, and a few of the most important only are herewith appended :—

(*a*) Lands of the Crown which, for the time being, are not subject to lease, sale, etc., and land, the property of and occupied by or on behalf of His Majesty.
(*b*) Botanical gardens at Hobart and Launceston.
(*c*) Public roads, cemeteries, reserves, and recreation grounds.
(*d*) Land on which is built any public library, museum, hospital, or any building used solely for charitable or religious purposes, or State schools.
(*e*) Any land owned by any local authority, or any local governing or statutory public body.

(*d*) Income Tax.

1. **General.**—A duty on the income of persons, whether it be derived from personal exertion or from the produce of property, is now imposed in all the States of the Commonwealth. As will be seen in dealing with the different States, the rates, exemptions, etc., are widely divergent, but the general principle of the several Acts is strikingly consistent. The Dividend Duties Acts of Queensland and Western Australia—the former of which is now repealed—supplied to a certain extent the place of an income tax in those States in former years, but, with the increasing demands upon the State Treasury, the levying of a direct income tax has been resorted to.

In the following table particulars are furnished concerning the total amount collected in the several States during the years 1901-2 to 1906-7. In the case of Queensland and Western Australia the amount of dividend duty collected is included, as is also the amount of ability tax in Tasmania, these taxes being closely allied to the income tax:—

INCOME, DIVIDEND, AND ABILITY TAXES, 1901-2 TO 1906-7.

State.	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.
	£	£	£	£	£	£
New South Wales	211,871	224,306	216,655	231,442	276,299	283,422
Victoria ...	220,645	415,353	311,178	317,290	318,233	355,148
Queensland ...	66,204	222,149	222,343	253,918	264,957	284,476
South Australia ...	80,893	114,720	121,469	136,866	128,756	166,582
Western Australia	85,890	127,607	125,071	123,733	187,485	116,916
Tasmania... ...	*20,203	*14,943	*37,529	88,883	98,321	116,949
Commonwealth	685,706	1,119,078	1,034,245	1,147,132	1,224,051	1,323,493

* Calendar years 1901, 1902, and 1903 respectively.

2. **New South Wales.**—(i.) *Legislation.* The Acts under which the administration of the income tax is carried out in New South Wales are as follows:—

(*a*) Land and Income Tax Assessment Act 1895, with amendments in 1896, 1897, 1898, and 1904.
(*b*) Income Tax Act 1895, with amendment in 1907.
(*c*) Taxation Amending Act 1905 and 1906.

The Land and Income Tax Assessment Act, which was assented to on 12th December, 1895, and came into force on the first day of the following year, is the principal Act. Under this Act the amount of taxable income from all sources for the year immediately preceding the year of assessment is the amount on which tax is payable, except in the case of income earned outside the State of New South Wales, which is not subject to taxation. The 1898 Act declared that for the purposes of taxation, the extracting from the soil, winning, producing, or manufacturing in the State of any product, commodity or substance and its export, is part of the carrying on of such trade in New South Wales, and the value of such product, etc., when exported is income earned in the said State.

(ii.) *Rates.* Under the Income Tax Act of 1895 the rate payable in New South Wales is sixpence in the pound on the amount of all incomes which exceed £200 per annum.

(iii.) *Exemptions.* The subjoined is a list of incomes, revenues, and funds which are exempt from the payment of income tax:—

(*a*) Income not exceeding £200 per annum.
(*b*) Revenues of municipal corporations or other local authorities.
(*c*) Incomes of mutual life assurance societies, and of other companies or societies not carrying on business for purposes of profit or gain.
(*d*) Dividends and profits of the Savings Bank of New South Wales, the Post-office Savings Bank, and the income of registered friendly societies.
(*e*) Incomes and revenues of all ecclesiastical, charitable, and educational institutions of a public character.
(*f*) Income derived from the ownership, use, or cultivation of land subject to land tax.

The exemptions declared in sub-sections (*b*) to (*e*) above do not extend to the salaries and wages of persons employed by such corporations, companies, etc.

(iv.) *Deductions.* In the case of a company the person liable to taxation in respect of an income exceeding £200 was, under the principal Act, entitled to a deduction of £200 in the assessment of such income, but by the Amendment Act of 1907, which came into force on 1st January, 1908, it has been provided that the deduction is in the first place to be made from so much of the income as is derived from personal exertion. The latter Act also provides—(*a*) that where the income derived from personal exertion is less than £200 the deduction is to be made to the extent of such income, and any part of the £200 not applied in such deduction is to be taken from the income derived from the produce of property; and (*b*) when the income of any person, not being a company, which is obtained by personal exertion, exceeds £200, he is entitled to a further deduction of the amount by which such income exceeds £200, provided that the total deductions do not, in any case, exceed £1000.

In addition to the above, deductions are allowed on account of losses, repairs, cost of earning incomes, etc., and also on account of expenditure not exceeding £50 per annum on life assurance.

3. **Victoria.**—(i.) *Legislation.* The principal Act in Victoria, the Income Tax Act of 1895, was assented to on 29th January of that year. On the 24th December following the Income Tax Rate Act received assent, and since then, with one exception, an Act has been passed each year declaring rates for the year ending 31st December following the date on which the Act came into force. The first scale of taxation was provided for by the Income Tax Rate Act 1895, and remained in force until 1st January, 1903, when the first amendment of 1903 came into force. The rates contained in the latter Act were superseded when the second amendment of 1903 came into operation, and still again altered by the 1904 Act, the rates of which are in force at present.

(ii.) *Rates.* Under the provisions of the last-mentioned Act a person, not being a company, is subject to the following rates of duty on the amount of his income from personal exertion, viz.—For every £1 up to £500, threepence; over £500 and up to £1000, fourpence; £1000 and up to £1500, fivepence; and over £1500, sixpence; with double these rates if the income be derived from the produce of property. An exemption of £156 was allowed under the above Act, but this was increased to £200 by the Act of 1906, and that sum is still exempt from taxation. The Act of 1907 provides that the amount of income tax, computed on the above basis, to be payable by a person, not being a company, for the year ending 31st December, 1908, shall be reduced by 20 per cent. Land used as a residence by the owner is deemed to return 4 per cent. on its actual capital value.

(iii.) *Special Rates.* (*a*) A tax of sevenpence is levied on the income of any company liable to tax, not being a life assurance company, for every pound sterling of the taxable amount thereof, and a similar tax of eightpence on a company which carries on in Victoria the business of life assurance; and (*b*) a tax of five pounds on every £100 of the amount payable to him for the carriage of passengers, live stock, mails, or goods shipped in Victoria, is imposed on every owner or charterer of a ship whose principal place of business is out of Victoria.

(iv.) *Exemptions.* Some of the most important exemptions from taxation are as follows:—

(*a*) Persons whose income does not exceed £200.

(*b*) Income of the Governor; a Minister of the Crown; Board of Land and Works; Railway Commissioners; Harbour Trust; Board of Works; Fire Brigades; Savings Bank; University, Working Men's College; or any Public College affiliated to the University.

(*c*) Income of religious bodies, registered friendly, provident, building and trade union societies.

(*d*) Trust societies, associations, etc., not carrying on business for purposes of gain to members; mutual fire insurance companies and fire or marine insurance companies, licensed under the Stamps Acts, whose head office is in Australia, and mining companies.

(*e*) Interest accruing to any person not resident in Victoria from stock, debentures or Treasury bonds of the Government of Victoria, or issued by any public or municipal trust, body, or corporation.

(v.) *Deductions.* All losses and so forth incurred in Victoria by any taxpayer in the production of his income, and all taxes payable by him (income tax excepted) are allowed to be deducted from the gross amount of his income; as is also a sum not exceeding £50 from the amount of premiums paid for life assurance; but no deduction by way of exemption from income tax is permitted to a person who has been out of the State for six consecutive months in the year during which the income was received; or for any sum expended on repairs of premises, implements, etc., used for the purpose of trade, or for bad debts and the maintenance of the families of taxpayers.

4. **Queensland.**—(i.) *Legislation.* The laws under which the income tax of Queensland is regulated are contained in the Income Tax Act of 1902, and its amendments of 1902, 1904, 1905, 1906, and 1907. The first-named, which is the principal Act, was assented to on 1st December, 1902. The Dividend Duty Act of 1890, which imposed a tax on the dividends declared by public companies having their head office or place of business in Queensland, was repealed by the Income Tax Amendment Act of 1904, and in lieu thereof the rates that are shewn in (*c*) below are enforced.

(ii.) *Rates.* The present rates of duty as laid down in the Amendment Acts of 1906 and 1907 are as follows, provided that the total income of a person, not being a company or an absentee, exceeds £200:—

(*a*) On the income derived from personal exertion:—Where the total income does not exceed £500 the tax levied is sixpence for every pound; where it exceeds £500 and does not exceed £1000, sixpence for every pound of the first £500 and sevenpence for every pound over £500; where it exceeds £1000 and does not exceed £1500, sevenpence for every pound of the first £1000 and eightpence for every pound over £1000; and when the income exceeds £1500, eightpence for every pound is payable.

(*b*) On the income derived from the produce of property the rate is ninepence for every pound.

(*c*) On the income of all companies, or of an absentee, that is, a person not domiciled in Australia, one shilling in the pound is charged, provided that, in the case of a company whose head office is in Queensland, the income is assessed at not less than the amount of dividends declared during the year, and if the profits remain undistributed amongst the shareholders, only sixpence in the pound is payable upon such undistributed profits. In the case of foreign companies, that is, companies whose head office is outside Queensland, special rules are given in the Act for determining the taxable amount of income.

(iii.) *Exemptions.* Included in the list of exemptions are the following incomes which are free from taxation:—

(*a*) Income of a person, not being a company, which does not exceed £200.

(*b*) Income of the Governor of Queensland, and the revenues of local bodies derived for purposes of local self-government.

(*c*) Incomes of societies and institutions not carrying on business for purposes of profit or gain, and of any registered friendly societies.

(*d*) Incomes and revenues of religious, charitable and educational institutions of a public character.

(*e*) Incomes arising or accruing from debentures, stock or Treasury bills issued by the Government of Queensland, or derived as dividends from any company which has paid in Queensland income tax on the profits from which such dividends are paid.

(iv.) *Deductions.* When the income of a person, not being a company or an absentee, exceeds £200 per annum, the deduction of £200 is, in the first place, made from the income, if any, derived from personal exertion. The amount of all premiums not exceeding £50 paid by a taxpayer in respect of life assurance policies, or into any superannuation fund, etc., and all losses and outgoings actually incurred in Queensland by him in production of his income, are also amongst the deductions which are allowed.

5. **South Australia.**—(i.) *Legislation.* Under the Acts given herewith the income tax of South Australia is collected:—

(*a*) Taxation Act 1884, with amendments in 1885, 1887, 1894, 1900, 1902, 1903, 1904, and 1905.
(*b*) Additional Income Tax Act 1893.
(*c*) Income Tax Continuance Act 1893, with amendments in 1897 and 1898.
(*d*) Increase of Taxes Act 1902.

On the 14th November, 1884, the principal Act, the Taxation Act, was assented to. The rates of duty enforced thereby were superseded in order by the Additional Income Tax Act of 1893, the Amendment Act of 1894, the Increase of Taxes Act of 1902, and the Amendment Act of 1903; the scale enacted by the latter Act still remaining in operation.

(ii.) *Rates.* Under the last-mentioned Act the income of every person of the value of £150 or over is subject to a tax of fourpence half-penny for every pound up to and inclusive of £800, and sevenpence for every pound above that amount if the income be derived from personal exertion; but if the income consist of the produce of property, the rate is ninepence for every pound up to and inclusive of £800, and thirteenpence half-penny for every pound above the sum of £800.

(iii.) *Exemptions.* The following incomes are not subject to the payment of income tax:—

(*a*) Income of every person under the value of £150.
(*b*) Income of municipal corporations and district councils.
(*c*) Income of companies, public bodies and societies, not carrying on business for the purpose of gain to be divided among the shareholders, and the income of all friendly societies.
(*d*) Income derived from land on which land tax is payable, provided that such income does not exceed five per cent. of the actual value thereof.
(*e*) Income derived from land and produced by personal exertion where the land does not exceed £1000 in unimproved value.

(iv.) *Deductions.* All expenses, etc., actually incurred by a taxpayer in the production of his income are deducted from the gross amount of his income. If he has been out of South Australia for twelve consecutive months prior to the date on which the tax fell due, or if his net income from all sources exceeds £400, no deduction of any kind is allowed. In the case of an income which exceeds £150, that sum is deducted from the net amount of income derived from the produce of property, but if such income does not amount to £150, the difference shall be taken from that derived from personal exertion. No deductions are allowed for the cost of maintenance of a taxpayer and his family or establishment; cost of implements, etc., for purposes of the trade, except renewals for wear and tear; and domestic or private expenses.

6. **Western Australia.**—(i.) *Legislation.* On 20th December, 1907, the first Income Tax Act of Western Australia received assent under the title of the Land and Income Tax Assessment Act 1907, and on the same day the Land Tax and Income Tax Act was passed, declaring rates for the year ending 30th June, 1908. The first-named provides that when the amount due from taxation exceeds the sum of twenty shillings, the same is payable in two equal half-yearly instalments. Under the second Act only half the tax levied for 1907-8 is required to be collected and is to be paid in one sum. The two Acts thus practically came into force on 1st January, 1908.

(ii.) *Rates.* A tax of fourpence in the pound is levied on the annual amount of all incomes exceeding £200 per annum. An additional 50 per cent. is payable on the income of any person who has not been resident in the Commonwealth of Australia during any part of the year preceding the year of assessment, provided that he has not been absent on public service.

(iii.) *Exemptions.* The following are the most important cases of incomes, revenues, and funds exempt from income tax:—

(*a*) Incomes not exceeding £200 per annum,
(*b*) Revenues of municipal corporations, road boards, or other statutory public bodies.
(*c*) Incomes of life assurance companies and of companies or societies not carrying on business for the purposes of profit or gain.
(*d*) Dividends and profits of companies subject to duty under the Dividend Duties Act, and of the Government Savings Bank and Agricultural Bank.
(*e*) Income of the Governor of Western Australia, and of all ecclesiastical, charitable and educational institutions of a public character.
(*f*) Incomes arising or accruing to any person from Western Australian Government debentures, inscribed stock, and Treasury bills.
(*g*) Income derived from land on which land tax is payable.

(iv.) *Deductions.* Sums expended by a taxpayer for repairs of premises, and expenses, etc., incurred in the production of his income are deducted from the amount on which duty is payable; as are also sums not exceeding £50 in the aggregate which are paid as life assurance premiums or in connection with fidelity guarantees or bonds. The amount paid to a taxpayer's sons and daughters, over the age of sixteen years, employed in his trade or occupation; and a sum representing ten pounds for each child under the age of sixteen residing with, and dependent on him, are also allowed to be deducted from his income.

(v.) *Dividend Duties Act in Western Australia.* This Act was passed in order to impose a tax on the dividends or profits of incorporated companies and repealed the Company Duties Act passed in 1899. The Dividend Duties Act was passed on 20th December, 1902, and an amendment was assented to on 14th December, 1906. The principal Act provides that within seven days after the declaration of a dividend by a company carrying on business in Western Australia such company shall pay to the Colonial Treasurer a duty equal to one shilling for every pound of the amount or value of such dividend. A company that carries on in the State any insurance or assurance business exclusively (not being a life assurance company) is required to pay, on or before 1st March in each year, a sum equal to twenty shillings for every £100 of premiums, and a proportionate sum for every £100 of such premiums. The rates payable by shipping companies are 5 per cent. of 5 per cent. on all inward or outward traffic, including passenger fares, and 5 per cent. of the profits on sales of coal or other goods, or of the profit of vessels trading exclusively within the State.

7. **Tasmania.**—(i.) *Legislation.* The Income Tax Act of 1902, which received assent on 20th December, 1902, and came into force on the following 1st January, and its amendment of 1904, are the Acts which govern this form of taxation in Tasmania. The first-named Act repealed the Real and Personal Estates Duties Act of 1880 and five of its amendments.

(ii.) *Rates.* The duty levied by the principal Act as amended by the 1904 Act is one shilling for every pound sterling of the taxable amount derived either from personal exertion or from the produce of property, provided that the income is £100 or over per annum. The same scale also applies to the income of any company except those that are specially mentioned below, and to dividends. Special rules for determining the taxable income of certain foreign companies are given in the Act.

(iii.) *Exemptions.* The exemptions from taxation in this State comprise the following:—

(*a*) Income of any person, not being a company, under £100 per annum, provided that such income is not received as a prize in any lottery authorised by law in Tasmania.
(*b*) Revenues of Municipal Corporations, Road Trusts, Town and Marine Boards, Water Trusts and local government bodies.

(*c*) Incomes of companies, societies, etc., not carrying on business for the purposes of gain to the shareholders, and registered friendly societies.

(*d*) Income of the Governor of Tasmania.

(*e*) Income derived as rent for the use and occupation of land that is subject to land tax.

(*f*) Income of every person arriving in Tasmania for a period of six months after his arrival.

(iv.) *Deductions.* When a person's income is £100 and under £400 the following deductions are allowed:—If it be £100 and less than £110, a deduction of £80; £110 and under £120, £70; £120 and under £150, £60; then for every increase of £50 in the income the deduction is reduced by £10, which is allowed for incomes of £350 and under £400. On incomes amounting to the last-named sum or more no deduction is permitted. When the income is derived partly from personal exertion and partly from the produce of property the deduction is made from the part derived from personal exertion, and if such part of the income is insufficient to allow the full benefit of such deduction, then the balance is made up from the part of the income derived from property. Losses, outgoings, etc., and rent paid by a tenant of land and buildings occupied and used for carrying on his business are not deducted, except the rent of such portion as is used for the residence of the occupier. This also applies in the case of the owner of property.

(v.) *Ability Tax in Tasmania.* The Taxation Act of 1904 provides for the levying of a tax upon persons in proportion to their means or ability. It was assented to on 1st November, 1904, and an amending Act was passed on 30th November, 1906. The assessment of the taxable amount is determined according to the annual value of the property occupied or the amount paid for board and lodging, as the case may be, and varies in the case of property from one penny to sixpence in the pound of annual value, with a minimum of two shillings and sixpence, and in the case of board and lodging from three halfpence to sixpence in the pound on the amount payable annually for board and lodging.

8. **Taxation of Commonwealth Salaries and Allowances.**—On 8th October, 1907, the Commonwealth Salaries Act, passed by the Federal Parliament, received the Governor-General's assent. By this Act it is declared that salaries and allowances paid by the Commonwealth are liable to taxation by the States. The tax is payable in the State in which the officer resides and the salary is earned, and in the case of a member of the Parliament of the Commonwealth, in the State in which he was elected. The only exemption from taxation is the salary of the Governor-General. This Act was the outcome of considerable litigation, brought about by the refusal of persons in receipt of Federal salaries and allowances to pay income tax in respect thereof.

§ 3. Trust Funds.

1. **Nature.**—In addition to the moneys received by the several State Governments as revenue, and paid to the credit of their respective Consolidated Revenue Funds, considerable sums are held by the Governments in trust for various purposes. One of the chief sources of these trust funds is the State Savings Bank, which exists in each State, either as a Government department or under the control of a Board acting under Government supervision or Government guarantee. In most of the States also sinking funds for the redemption of public debt are provided, and the moneys accruing thereto are paid to the credit of the appropriate trust funds. A similar course is followed in the case of municipal sinking funds placed in the hands of the Government. In all the States except New South Wales, life assurance companies carrying on business are required to deposit a substantial sum in cash or approved securities with the Government, and these deposits go to further swell the trust funds. Various other deposit accounts, superannuation funds, suspense accounts, etc., find a place in these funds. The trust funds have at various times enabled the several State Treasurers to tide over awkward financial positions, but the propriety of allowing deficits to be frequently liquidated in this manner is worthy of very serious consideration

2. **Extent of Funds.**—The amount of such funds held by the several State Governments on 30th June, 1907, was as follows:—

TRUST FUNDS ON 30TH JUNE, 1907.

Particulars.	N S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£	£	£	£	£	£	£
Amount of trust funds	2,359,951	7,014,924	Dr. 405,307	693,963	5,230,340	1,245,305	16,139,176

§ 4. Loan Funds.

1. **Nature.**—As early in the history of Australia as 1842 it was deemed expedient to supplement the revenue collections by means of borrowed moneys, the earliest of the loans so raised being obtained by New South Wales for the purpose of assisting immigration, at rates of interest varying from 2¾d. to 5¼d. per £100 per diem, or approximately from 4½ per cent. to 8 per cent. per annum. The principal reason for Australian public borrowing, however, has been the fact that the Governments of the several States have, in addition to ordinary administrative duties, undertaken the performance of many functions which, in other countries, are usually entrusted to local authorities, or left to the initiative of private enterprise. Principal amongst these has been the construction of railways and the control of the railway systems of the several States, while the assumption by the State Governments of responsibilities in connection with improvements to harbours and rivers, and the erection of lighthouses, as well as the construction of works for the purposes of water supply and sewerage, have materially swelled the amounts which it has been considered expedient to obtain by means of loans. The Australian loan expenditure and public debt thus differ very materially from those of most European countries, where such expenditure is very largely incurred for purposes of defence, or absorbed in the prosecution of war. The debt of Australia, on the other hand, consists in the main of moneys raised and expended with the object of assisting the development of the resources of the Commonwealth, and is, to a very large extent, represented by tangible assets such as railways, tramways, waterworks, etc.

2. **Loan Expenditure, 1906-7.**—During the year ended 30th June, 1907, the actual expenditure of the Australian States from loan funds amounted to £3,882,925, New South Wales with a total of £1,058,553 being the principal contributor to this total, while Western Australia, whose expenditure amounted to £900,964, ranked second. The chief item of expenditure for the year was that of railways and tramways, which represented a total of £1,442,168; water supply and sewerage works to the amount of £691,612; land purchases for settlement, £518,572; and the expenditure on harbours, rivers, etc., totalling £361,154, were the most important of the remaining items. Details for the year for each State are given in the following table:—

AUSTRALIAN LOAN EXPENDITURE, 1906-7.

Heads of Expenditure.	N.S.W.	Vic.	Qld.	S. Aust.	W. Aust.	Tas.	Total.
	£	£	£	£	£	£	£
Railways and tramways	421,741	73,843	554,783	47,121	329,527	15,158	1,442,168
Water supply and sewerage ...	325,908	161,346	2,308	110,342	91,708	...	691,612
Harbours, rivers, etc.	172,361	...	421	91,134	96,050	1,188	361,154
Roads and bridges	11,162	444	...	...	15,613	75,399	102,618
Defence	...	...	4	87	...	...	91
Public buildings	127,381	...	20,280	7,684	112,097	6,790	274,182
Development of mines, etc. ...	...	...	2,990	...	97,322	...	100,312
Advances to settlers	...	...	...	Cr. 4,418	442	...	Cr. 3,976
Land purchases for settlement ...	...	339,497	...	179,075	...	...	518,572
Loans to local bodies	...	...	64,263	...	...	53,708	117,971
Rabbit-proof fences	...	...	36,761	43,054	131,017	...	210,832
Other public works and purposes ...	...	13,049	1,760	20,635	27,188	4,757	67,389
Total	1,058,553	588,179	683,570	494,714	900,964	156,945	3,882,925

3. **Aggregate Loan Expenditure.**—The total loan expenditure of the Australian States from the initiation of the borrowing system to the 30th June, 1907, has amounted to no less a sum than £231,108,346. The manner in which this sum has been spent in the several States is furnished in the following table:—

AGGREGATE AUSTRALIAN LOAN EXPENDITURE TO 30TH JUNE, 1907.

Heads of Expenditure.	N.S.W.	Vic.	Qld.	S. Aust.	W. Aust.	Tas	Total.
	£	£	£	£	£	£	£
Railways and tramways ...	49,996,323	38,895,190	24,346,672	13,940,927	9,948,498	4,143,911	141,271,521
Telegraphs and telephones ...	1,297,582	...	1,051,869	991,773	269,308	142,410	3,752,942
Water supply and sewerage ...	12,183,126	9,188,990	371,848	5,365,255	2,984,099	...	30,093,318
Harbours, rivers, etc. ...	10,726,495	611,059	2,580,411	1,674,354	2,278,579	526,289	18,397,187
Roads and bridges	1,784,582	175,983	974,892	1,464,736	158,862	2,430,840	6,989,896
Defence	1,457,536	149,323	383,225	291,630	...	128,179	2,409,893
Public buildings	4,717,932	1,912,029	1,523,331	868,558	179,221	858,277	10,059,348
Immigration...	194,430	...	2,916,355	...	28,085	235,000	3,373,870
Development of mines, etc. ...	...	131,665	...	...	1,070,403	...	1,202,068
Advances to settlers... ...	647,624	114,235	...	89,149	4,061	...	855,069
Land purchases for settlement	139,000	1,324,182	...	836,028	300,000	...	2,599,210
Loans to local bodies ...	...	...	2,723,200	...	...	475,468	3,198,668
Rabbit-proof fences	...	...	...	300,589	296,096	...	596,685
Other pub. works and purposes	49,855	1,524,234	1,675,636	2,251,356	219,031	588,559	6,308,671
Total...	83,194,485	54,026,890	38,547,439	28,074,355	17,736,244	9,528,933	231,108,346

It must be noted that the figures furnished in this table represent the amounts actually spent, and consequently differ somewhat from those given later in the statements relating to the public debt, which represent amount of loans still unpaid at a given date. The loan expenditure statement includes all such expenditure, whether the loans by means of which the necessary funds were raised have been repaid or are still in existence. On the other hand, in the public debt statement loans repaid are excluded, but in the case of loans still outstanding each is shewn according to the amount repayable at maturity, not according to the amount originally available for expenditure.

4. **Relative Importance of Loan Items.**—The relative importance of the different items of loan expenditure given in the foregoing table varies considerably in the several States, but in each instance the expenditure on railways and tramways predominates, the percentage of this item on total expenditure ranging between the limits of 50 per cent. in the case of South Australia and 72 per cent. in that of Victoria. The following table gives for the several States the percentage of each item on the total loan expenditure of that State to 30th June, 1907:—

PERCENTAGE OF EACH ITEM ON TOTAL LOAN EXPENDITURE OF THE STATES TO 30TH JUNE, 1907.

Heads of Expenditure.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Total.
	%	%	%	%	%	%	%
Railways and tramways ...	60.10	71.99	63.16	49.66	56.09	43.49	61.13
Telegraphs and telephones ...	1.56	...	2.73	3.53	1.52	1.49	1.62
Water supply and sewerage ...	14.64	17.01	0.97	19.11	16.82	...	13.02
Harbours, rivers, etc.	12.89	1.13	6.69	5.96	12.85	5.52	7.96
Roads and bridges	2.15	0.33	2.53	5.22	0.90	25.51	3.03
Defence	1.75	0.28	0.99	1.04	...	1.34	1.04
Public buildings	5.67	3.54	3.95	3.09	1.01	9.01	4.35
Immigration	0.23	...	7.56	...	0.16	2.47	1.46
Development of mines, etc. ...	...	0.24	...	...	6.03	...	0.52
Advances to settlers	0.78	0.21	...	0.32	0.02	...	0.37
Land purchases for settlement	0.17	2.45	...	2.98	1.69	...	1.13
Loans to local bodies ...	...	...	7.07	...	...	4.99	1.38
Rabbit-proof fences	...	...	...	1.07	1.67	...	0.26
Other public works & purposes	0.06	2.82	4.35	8.02	1.24	6.18	2.73
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00

5. **Loan Expenditure in Successive Years.**—In the following table are given particulars relative to the loan expenditure of the several States during each of the years 1901-2 to 1906-7:—

AUSTRALIAN LOAN EXPENDITURE, 1901-2 TO 1906-7.

Year	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Total.
	£	£	£	£	£	£	£
1901-2 ...	4,939,241	910,833	1,161,689	566,079	1,545,823	341,994	9,465,659
1902-3 ...	4,713,386	756,404	1,022,405	465,554	1,665,901	238,631	8,862,281
1903-4 ...	2,288,742	447,244	603,805	415,728	710,629	167,123	4,633,271
1904-5 ...	1,571,257	373,191	225,466	449,214	654,353	150,994	3,424,475
1905-6 ...	1,367,022	932,966	297,624	449,930	372,442	136,971	3,556,955
1906-7 ...	1,058,553	588,179	683,570	494,714	900,964	156,945	3,882,925

Throughout the six years under review the loan expenditure of New South Wales exceeded that of any other of the States, and for the years 1901-2 and 1902-3 represented more than half of the aggregate loan expenditure of Australia. The amount so spent in New South Wales has, however, continuously declined from £4,939,241 in 1901-2 to £1,058,553 in 1906-7. In South Australia the annual loan expenditure during the past five years has varied but little from £450,000. In Tasmania the loan expenditure continuously declined from £341,994 in 1901-2 to £136,971 in 1905-6. In the three remaining States fluctuations have been in evidence; thus, Victoria had a minimum loan expenditure for the period in 1904-5 and a maximum in 1905-6, the figures being, respectively, £373,191 and £932,966; Queensland had a minimum of £225,466 in 1904-5 and a maximum of £1,161,689 in 1901-2; while Western Australia had a minimum of £372,442 in 1905-6 and a maximum of £1,545,823 in 1901-2. The large loan expenditure of New South Wales in 1901-2 and 1902-3 was incurred chiefly in connection with railway construction and the resumption of the foreshores and adjoining properties of Darling Harbour. In Victoria the large expenditure of 1901-2 was in great part due to railway construction, while that of 1905-6 resulted in large measure from the purchase of lands for closer settlement. In the case of the large loan expenditure of Queensland in 1901-2 and 1902-3, as well as that of 1906-7, railway construction was the principal contributing item. In Western Australia the heavy loan expenditure of 1901-2 and 1902-3 was principally in connection with railway construction and water supply, while the increased expenditure of 1906-7, compared with 1905-6, was mainly incurred in connection with railway construction, public buildings, and rabbit-proof fencing.

6. **Loan Expenditure per Head.**—The loan expenditure per head of population varies materially in the different States and in different years, reaching its highest point for the six years under review in Western Australia in 1902-3, and its lowest in Victoria in 1904-5. Particulars concerning the loan expenditure per head for the six years 1901-2 to 1906-7 are given hereunder:—

LOAN EXPENDITURE PER HEAD, 1901-2 TO 1906-7.

Year.	N.S.W.			Victoria.			Q'land.			S. Aust.			W. Aust.			Tasmania.			All States.		
	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
1901-2 ...	3	11	10	0	15	1	2	5	11	1	10	11	7	19	3	1	19	10	2	9	6
1902-3 ...	3	7	2	0	12	6	2	0	0	1	5	5	7	16	2	1	7	7	2	5	8
1903-4 ...	1	12	1	0	7	5	1	3	5	1	2	7	3	2	8	0	18	11	1	3	7
1904-5 ...	1	1	7	0	6	2	0	8	8	1	4	1	2	14	0	0	16	9	0	17	2
1905-6 ...	0	18	4	0	15	4	0	11	3	1	3	10	1	9	3	0	15	2	0	17	7
1906-7 ...	0	13	10	0	9	7	1	5	7	1	5	9	3	8	10	0	17	5	0	18	10

§ 5. Public Debt.

1. **The Initiation of Public Borrowing.**—The earliest of the loans raised in Australia for Government purposes was that obtained by New South Wales in 1842. This and nine other loans raised prior to 1855 were all procured locally. In the last-men-

tioned year Australia's first appearance on the London market occurred, the occasion being the placing of the first instalment of a New South Wales 5 per cent. loan for £683,300. Victoria first appeared as a a borrower in 1854, and made its first appearance on the London market in 1859. In the remaining States the first public loans were raised in the following years:—Queensland 1861, South Australia 1854, Western Australia 1845, and Tasmania 1867.

2. **Nature of Securities.**—All the earlier loans raised by the Australian States were obtained by the issue of debentures, some of which were repayable at fixed dates, and others by annual or other periodical drawings. In more recent years, however, the issue of debentures has given place to a great extent to that of inscribed stock, the inscription in the case of local issues being carried out by the State Treasuries, and in the cases of loans floated in London being mainly performed by the Bank of England and the London and Westminster Bank. The issue of debentures has not, however, been entirely discontinued, for within the last five years debentures to the amount of upwards of £2,000,000 were placed on the market by the Government of New South Wales. In other States also recent issues of debentures have taken place, the occasions usually being those in which the term of the loan is less than that ordinarily attaching to issues of inscribed stock. Another form of security is that variously known as the Treasury bill or Treasury bond. This is really neither more nor less than a short term debenture having a currency in most instances of from three to five years. These are issued in certain cases to liquidate deficiencies in revenue, and in others to obtain moneys for the purpose of carrying on public works at a time when it is deemed inexpedient to place a permanent loan on the market. The amount of the public debt of the several States held in each of these forms of security is furnished in the table given hereunder:—

PUBLIC DEBT OF AUSTRALIAN STATES, 30TH JUNE, 1907.

State.	Debentures.	Inscribed Stock.	Treasury Bills. For Public Works and Services.	Treasury Bills. In aid of Revenue.	Total Amount Outstanding.
	£	£	£	£	£
New South Wales ...	8,309,150	70,413,150	5,323,900	1,561,632	85,607,832
Victoria	4,804,119	43,169,010	4,981,860	150,000	53,104,989
Queensland	13,480,580	27,153,887	...	1,130,000	41,764,467
South Australia ...	8,028,200	18,432,068	2,766,225	1,300,225	30,526,718
Western Australia ...	425,500	18,297,138	500,000	...	19,222,638
Tasmania	3,014,250	6,692,518	...	216,315	9,923,083
Total	38,061,799	184,157,771	13,571,985	4,358,172	240,149,727

The manner in which the amount of public debt of the Australian States held under these various forms of security has grown during the past six years will be seen from the following table:—

PUBLIC DEBT OF AUSTRALIAN STATES, 30TH JUNE, 1901 TO 1907.

Date.	Debentures.	Inscribed Stock.	Treasury Bills. For Public Works and Services.	Treasury Bills. In aid of Revenue.	Total Amount Outstanding.
	£	£	£	£	£
30th June, 1901	44,060,320	151,140,371	5,914,000	2,403,584	203,518,275
" 1902	44,191,825	161,673,758	4,006,500	4,383,126	214,255,209
" 1903	43,639,525	168,388,889	6,046,775	4,796,576	222,871,765
" 1904	37,741,025	172,796,361	12,493,650	4,716,576	227,747,612
" 1905	39,158,744	175,047,336	12,045,100	4,487,491	230,738,671
" 1906	39,587,224	181,279,045	12,194,464	5,367,087	238,427,820
" 1907	38,061,799	184,157,771	13,571,985	4,358,172	240,149,727

During the six years between 30th June, 1901, and 30th June, 1907, the public debt of the States increased by £36,631,452, or at the rate of more than £6,000,000 per annum. The amount of debentures comprised in the total debt diminished by £6,000,000 during the period, while the amount held as inscribed stock increased by £33,000,000, and as Treasury bills by £9,500,000.

3. **Increase in Indebtedness of the Several States.**—The table given hereunder furnishes particulars of the increase which has taken place during the past six years in the public debts of the several States :—

PUBLIC DEBT OF AUSTRALIAN STATES, 30TH JUNE, 1901 TO 1907.

Date.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£	£	£	£	£	£	£
30th June 1901 ...	67,361,246	50,071,275	38,416,514	26,448,805	12,709,430	*8,511,005	203,518,275
" 1902 ...	71,592,485	50,983,957	40,418,177	27,272,545	14,942,310	*9,095,785	214,255,209
" 1903 ...	77,692,987	51,447,900	41,031,247	27,843,370	15,627,298	*9,228,963	222,871,765
" 1904 ...	90,033,581	51,819,962	41,773,297	28,593,645	15,090,288	9,436,839	227,747,612
" 1905 ...	82,321,998	51,763,767	41,764,467	28,773,695	16,642,773	9,471,971	230,738,671
" 1906 ...	85,441,734	53,079,800	41,764,467	30,062,635	18,058,553	9,800,631	238,427,820
" 1907 ...	85,607,832	53,104,980	41,764,467	30,526,718	19,222,638	9,923,083	240,149,727

* On 31st December, 1900, 1901, and 1902 respectively.

The States in which the greatest increase in indebtedness was experienced during the period are New South Wales and Western Australia, the former advancing by more than £18,000,000, the latter by more than £6,500,000. On the other hand the public debt of Tasmania increased by little more than £1,400,000.

4. **Indebtedness per Head.**—The indebtedness per head of population varies considerably in the several States, being highest in the case of Queensland and South Australia, and lowest in that of Victoria. Details for the period from 30th June, 1901, to 30th June, 1907, are as follows :—

AUSTRALIAN INDEBTEDNESS PER HEAD, 30TH JUNE, 1901 TO 1907.

Date.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
30th June, 1901 ...	49 9 3	41 11 8	76 9 11	73 3 6	67 5 0	*49 4 6	53 13 11
" 1902 ...	51 9 4	42 1 9	79 3 5	74 19 8	72 3 5	*52 3 2	55 11 6
" 1903 ...	54 17 7	42 11 9	80 0 5	76 5 7	70 7 11	*52 0 2	57 2 9
" 1904 ...	55 10 6	42 19 4	80 6 10	77 9 1	67 12 1	53 0 9	57 12 5
" 1905 ...	55 17 0	42 14 11	79 6 11	76 17 7	66 4 11	53 4 6	57 9 5
" 1906 ...	56 14 4	43 8 1	78 4 3	79 3 10	69 5 0	55 2 9	58 7 3
" 1907 ...	55 3 11	42 18 8	77 0 2	78 17 8	72 14 10	56 2 6	57 15 1

* On 31st December, 1900, 1901, and 1902 respectively.

5. **Flotation of Loans.**—The early loans of the Australian States, usually for comparatively small amounts, were raised locally, but, with the increasing demand for loan funds and the more favourable terms offering in the London than in the local money market, the practice of placing Australian public loans in London came into vogue, and for many years local flotations, except for short terms or small amounts, were comparatively infrequent. In more recent years, however, the accumulating stocks of money in Australia seeking investment have led to the placing of various redemption and other loans locally, with very satisfactory results. In the following table are given particulars of loans of the several States outstanding on 30th June, 1907, which had been floated in London and Australia respectively :—

PUBLIC DEBT OF AUSTRALIAN STATES, 30TH JUNE, 1907.

State.	Floated in London		Floated in Australia.		Total Public Debt.
	Amount.	Percentage on Total Debt.	Amount.	Percentage on Total Debt.	
	£	%	£	%	£
New South Wales	64,032,250	74.80	21,575,582	25.20	85,607,832
Victoria... ...	39,629,869	74.63	13,475,120	25.37	53,104,989
Queensland ...	35,409,347	84.78	6,355,120	15.22	41,764,467
South Australia ...	22,047,220	72.22	8,479,498	27.78	30,526,718
Western Australia	16,430,453	85.47	2,792,185	14.53	19,222,638
Tasmania ...	8,030,250	80.92	1,892,833	19.08	9,923,083
Total ...	185,579,389	77.28	54,570,338	22.72	240,149,727

The following table, giving corresponding particulars for the aggregate indebtedness of the Australian States at the end of each of the financial years 1900-1 to 1906-7, furnishes an indication of the rapidity with which the local holdings of Australian securities have grown in recent years:—

PUBLIC DEBT OF AUSTRALIAN STATES, 30TH JUNE, 1901 TO 1907.

Date.	Floated in London.		Floated in Australia.		Total Public Debt.
	Amount.	Percentage on Total Debt.	Amount.	Percentage on Total Debt.	
	£	%	£	%	£
30th June, 1901 ...	174,810,377	85.89	28,707,898	14.11	203,518,275
" 1902 ...	181,493,170	84.71	32,762,039	15.29	214,255,209
" 1903 ...	186,507,721	83.68	36,364,044	16.32	222,871,765
" 1904 ...	188,165,495	82.62	39,582,117	17.38	227,747,612
" 1905 ...	188,918,820	81.88	41,819,851	18.12	230,738,671
" 1906 ...	190,887,001	80.06	47,540,819	19.94	238,427,820
" 1907 ...	185,579,389	77.28	54,570,338	22.72	240,149,727

6. **Rates of Interest.**—As mentioned above the rate of interest paid in connection with the earliest Australian public loan was fivepence farthing per £100 per diem or, approximately, 8 per cent. per annum. At the present time the three principal rates of interest payable on Australian public securities are 4 per cent., 3½ per cent., and 3 per cent., most of the loans raised during the last six years bearing interest at the rate of 3½ per cent. The average rate payable on the aggregate indebtedness of the Australian States is approximately 3⅝ per cent. For the separate States the average rate payable varies considerably, being lowest in the case of Western Australia and highest in that of South Australia; the difference between the two average rates is somewhat more than ¼ per cent. In the table given hereunder are furnished particulars of the rates of interest payable on the public debt of the several States of the Commonwealth on 30th June, 1907:—

RATES OF INTEREST PAYABLE ON AUSTRALIAN PUBLIC DEBT, 30TH JUNE, 1907.

Rate of Interest.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Total.
%	£	£	£	£	£	£	£
6	—	—	—	308,900	—	—	308,900
5	2,700	—	—	240,000	—	—	242,700
4½	—	—	—	—	61,500	—	61,500
4	26,689,894	19,153,795	22,514,300	17,733,525	4,758,808	4,121,966	94,972,288
3¾	1,825,000	220,000	—	468,500	—	—	2,513,500
3½	38,760,274	23,043,884	13,761,184	5,804,848	7,052,330	5,099,589	93,522,109
3¼	—	150,000	—	—	—	24,718	174,718
3	18,321,814	10,536,310	5,488,983	5,918,195	7,350,000	676,810	48,292,112
Not bearing interest ...	8,150	1,000	—	52,750	—	—	61,900
Total public debt	85,607,832	53,104,989	41,764,467	30,526,718	19,222,638	9,923,083	240,149,727
Average rate per cent. payable	£3 10 2	£3 11 8	£3 14 1	£3 14 8	£3 8 9	£3 13 5	£3 12 1

The rapid increase which has taken place in recent years in the amount of Australian Government securities, bearing interest at 3½ per cent., is clearly shewn in the table hereunder, which gives particulars concerning the aggregate amount of the Australian indebtedness, at the several rates of interest, on 30th June in each of the years 1901 to 1907 :—

RATES OF INTEREST PAYABLE ON AUSTRALIAN PUBLIC DEBT. 30TH JUNE, 1901 TO 1907.

Rate of Interest.	30th June, 1901.	30th June, 1902.	30th June, 1903.	30th June, 1904.	30th June, 1905.	30th June, 1906.	30th June, 1907.
%	£	£	£	£	£	£	£
6	804,000	549,300	471,200	433,700	383,900	346,400	308,900
5	1,224,100	799,200	368,400	343,400	242,700	242.700	242,700
4½	5,079,500	5,077,300	5,075,100	69,100	66,700	64,200	61,500
4	93,669,865	91,610,265	93,786,003	98,648,571	103,944,877	102,577,852	94.972.298
3¾	...	...	1 500,000	1.825,000	1,825,000	2,045,000	2-518.500
3½	65,726,655	70,697 678	71,972,094	76,671.477	74,794.616	84 048,885	93,522,100
3¼	275,000	299.918	279,418	255,700	289,100	200,300	174,718
3	36,733,505	45,213,398	49,412,900	49,492,114	49,181,528	48 890,833	48,292,112
Not bearing interest ...	5,650	8,150	6,650	8,550	10,250	11,650	61.900
Total public debt ...	203,518,275	214,255,209	222.871,765	227,747,612	230,738,671	238,427,820	240,149,727
Average rate per cent. payable	£3 13 8	£3 12 10	£3 12 8	£3 12 4	£3 12 6	£3 12 5	£3 12 1

During the six years between 30th June, 1901, and 30th June, 1907, the Australian Government 4 per cent. securities increased by only £1,300,000, while the 3½ per cents. advanced by nearly £28,000,000, and the 3 per cents. by £11,500,000. During the same period the total amount at other rates than the three here mentioned declined by more than £4,000,000, from £7,382,600 to £3,301,318.

7. **Interest Payable per Head.**—The relative burden of the debts of the several States in respect of interest payments will be seen from the following table, which gives for the 30th June, 1907, the amount of interest payable annually on the debt of each State as outstanding at that date, and also the corresponding amount per head of population :—

ANNUAL INTEREST PAYABLE ON PUBLIC DEBT OUTSTANDING AT 30TH JUNE, 1907.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
Total annual interest payable ...	3,042,432	1,901,902	1,546,883	1 138.159	660 451	364.472	8 654.299
Annual interest payable per head	£1 19 3	£1 10 9	£2 17 1	£2 18 10	£2 10 0	£2 1 3	£2 1 7

8. **Dates of Maturity.**—An important point in which the securities of the Australian Governments, whether in the form of inscribed stock, debentures, or Treasury bills, differ from such a well-known form of security as British consols, consists in the fact that whereas the latter are interminable the Australian Government securities have in almost all cases a fixed date for repayment, the only exception being the State of New South Wales, which included in its public debt an amount representing interminable securities totalling on 30th June, 1907, £532,890. The terms of the loans raised by the issue of debentures and inscribed stock have varied considerably in the different States, ranging between fifteen and fifty years, while loans obtained by means of Treasury bills have usually been for such short terms as from one to five years. In the case of the majority of the loans the arrival of the date of maturity means that arrangements for renewal are necessary in respect of the greater portion of the loan, as it is only in exceptional cases that due provision for redemption has been made. The condition of the money market at the date of maturity has an important bearing on the success or otherwise with which the renewal arrangements can be effected, and consequently, in order to obviate the necessity for making an application to the market at an unfavourable time, several of the States have now adopted the practice of specifying a period of from ten to twenty years

prior to the date of maturity within which the Government, on giving twelve, or in some cases six, months' notice, has the option of redeeming the loan. By such means advantage may be taken by the Government during the period of opportunities that may offer for favourable renewals. Particulars concerning the due dates of the loans of the several States outstanding on 30th June, 1907, are given in the following table :—

DUE DATES OF AUSTRALIAN PUBLIC DEBT OUTSTANDING ON 30TH JUNE, 1907.

When Due.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Total.
	£	£	£	£	£	£	£
Overdue	8,150	1,000	...	8,600	...	...	17,750
1907	3,615,000	1,025,000	...	205,275	...	162,157	5,007,432
1908-9	4,416,354	2,073,869	...	6,525 250	500,000	1,008.519	14,523.992
1910-4	14,651,108	4,100,000	2,596,500	2,492,300	1,266.305	2,877,790	27.984,003
1915-9	16,827,331	7,781,860	11,723,800	5,066,180	256,025	91,888	41,751,584
1920-4	19,586,812	13,809,795	12,973,834	2,761,313	1,269,855	603,979	51,005,588
1925-9	222,255	7,213,000	...	703,410	2,500,000	72,650	10,716,315
1930-4	9,686,300	1,353,864	3,704,800	100	2,871,053	100	17,616,217
1935-9	12,500,000	300,000	...	7,636,445	9,380,000	...	29,816,445
1940-4	...	1,219,105	...	...	...	5,106,500	6,325,605
1945-9	...	9,778,519	8,813.933	...	1,000,000	...	19,592,452
1950-4	2,000,000	457,000	1,946,600	...	...	...	4,403,600
Interminable ...	532,890	...	...	...	...	...	532,890
Annual Drawings...	1,561,632	...	...	...	179,400	...	1,741,032
Indefinite... ...	...	3,991,977	...	5,122,845	...	...	9,114,822
Total ...	85,607,832	53,104,989	41,764,467	30,526,718	19,222,638	9,923,083	240,149,727

In the above table those loans, in the case of which the Government has the option of redemption during a specified period, have been in each instance classified according to the latest date of maturity. During the fifteen years from 1910 to 1924, inclusive, the amount falling due represents a total of no less than £120,741,175, or more than half the total outstanding at 30th June, 1907.

9. **Sinking Funds.**—The practice of providing for the ultimate extinction of the public debt by means of the creation of sinking funds, receiving definite annual contributions from Consolidated Revenue, and accumulating at compound interest, has only been consistently adopted in the case of Western Australia. This State has established, in connection with each of its loans, sinking funds varying from 1 per cent. to 3 per cent. per annum of the nominal amount of the loan. These funds are placed in the hands of trustees in London, by whom they are invested in the securities of the British, Indian, and Colonial Governments, and applied from time to time in the redemption of loans falling due. In the remaining States the sinking fund provision made is varied, consisting in certain instances of the revenues from specified sources, in others of the Consolidated Revenue Fund surplus, and in others again of fixed annual amounts. In the following table are given particulars of the sinking funds of each State, and the net indebtedness of each after allowance for sinking fund has been made, the details given being those for 30th June, 1907 :—

SINKING FUNDS AND NET INDEBTEDNESS, 30TH JUNE, 1907.

State.	Gross Indebtedness.	Sinking Fund.	Net Indebtedness.	Net Indebtedness per head.
	£	£	£	£ s. d.
New South Wales ...	85,607,832	505,346	85,102,486	54 17 5
Victoria	53,104,989	*832,988	52,272,001	42 5 2
Queensland	41,764,467	—	41,764,467	77 0 2
South Australia ...	30,526,718	531,466	29,995,252	77 10 2
Western Australia ...	19,222,638	1,600,044	17,622,594	66 13 9
Tasmania	9,923,083	261,431	9,661,652	54 12 11
Total... ...	240,149,727	3,731,275	236,418,452	56 17 1

* Including £300,000 loan money held for the redemption of loans falling due, 1908.

10. **London Prices of Australian Stocks.**—In examining the prices quoted for Australian Government Securities, particularly if the examination is made with the object of comparing the prices at a given time of different stocks, or the prices at different times of the same stock, several points in connection with the securities need to be kept in view; the principal of these are—(*a*) the rate of interest payable, (*b*) the date of maturity, and (*c*) the date at which interest is payable.

In the following tables particulars are given of the London prices of some of the principal 3½ per cent. stocks of the several States during 1907. The quotations given are the middle prices, taken from the *Economist*, and are for the last Friday in each quarter :—

LONDON QUOTATIONS FOR AUSTRALIAN 3½ PER CENT. STOCKS DURING 1907.

State.	Rate of Interest Payable.	Year of Maturity.	Months in which Interest is Payable.	London Prices (cum dividend) on			
				29th Mar. 1907.	28th June 1907.	27th Sept. 1907.	27th Dec. 1907
	%						
New South Wales	3½	1918	Mar.—Sept.	98	100½	97	98
Victoria ...	3½	1923	Jan.—July	99	98½	98½	96½
Queensland ...	3½	1924-30	Jan.—July	98	98	98	96
South Australia ...	3½	1939	Jan.—July	100	99	98½	98½
West. Australia ...	3½	1915-35	May—Nov.	97	98	97½	95
Tasmania ...	3½	1920-40	Jan.—July	99	98	98	96

The general decline in prices of stocks towards the close of 1907 was due in a large measure to the American financial crisis and the abnormal increase in interest and discount rates consequent thereon.

SECTION XXI.

PRIVATE FINANCE.

§ 1. Currency.

1. **The Three Australian Mints.**—Soon after the discovery of gold in Australia steps were taken for the establishment of a branch of the Royal Mint in Sydney. The formal opening took place on the 14th May, 1855, the mint being located in the southern part of the building once known as the "rum hospital," where it has remained up to the present. It is now proposed, however, to erect more suitable buildings for its accommodation in some other part of the city. The Melbourne branch of the Royal Mint was opened on the 12th June, 1872, and the Perth branch on the 20th June, 1899. The States of New South Wales, Victoria, and Western Australia provide an annual endowment, in return for which the mint receipts are paid into the respective State Treasuries, and it may be said that, apart from expenditure on buildings, new machinery, etc., the amounts paid into the Treasuries fairly balance the mint annuities.

2. **Receipts and Issues in 1906.**—(i.) *Assay of Deposits Received.* The number of deposits received during 1906 at the Sydney Mint was 2567, of a gross weight of 965,194 ozs.; at the Melbourne Mint, 4864, of a gross weight of 1,054,291 ozs.; and at the Perth Mint, 7083, of a gross weight of 1,498,860 ozs. The average composition of these deposits in Sydney was, gold 886.3, silver 74.4, base 39.3 in every 1000 parts; Melbourne, gold 915.6, silver 48.3, base 36.1 in every 1000 parts; and Perth, gold 838.5, silver 106.6, base 54.9 in every 1000 parts. As many parcels have, however, undergone some sort of refining process before being received at the mint, the average assay for gold shews higher in these figures than for gold as it naturally occurs.

(ii.) *Receipts.* Practically all the gold coined at the Australian mints is the produce of either the Commonwealth or of the Dominion of New Zealand. The Sydney Mint, however, receives small parcels from Papua, and some gold produced in Madagascar has been sent to Perth for coinage. The following table shews the origin of the gold received at the three mints during 1906:—

ORIGIN OF GOLD RECEIVED DURING 1906.

Origin of Gold.	Sydney Mint.	Melbourne Mint.	Perth Mint.
	ozs.	ozs.	ozs.
New South Wales	200,381.95	7,752.16	...
Victoria	0.88	848,298.32	8.00
Queensland...	410,387.31	30.72	...
South Australia	502.95	17,944.95	...
Western Australia	460.88	18,699.52	1,498,436.00
Tasmania	3,385.47	22,555.47	...
New Zealand	349,954.45	132,529.12	...
Other countries, origin not stated, and light gold coin	120.28	6,481.13	416.00
Total	965,194.17	1,054,291.39	1,498,860.00

It will be seen that practically all gold produced in New South Wales and Queensland, about three-fourths of that produced in New Zealand, and one-eighth of the Tasmanian produce, found its way to the Sydney Mint, while the Melbourne Mint received all Victorian and South Australian gold, together with seven-eighths of the Tasmanian and one-fourth of the New Zealand production, and the Perth Mint coined practically all Western Australian gold with the exception of a small portion sent to Melbourne.

(iii.) *Issues.* The Australian mints, besides issuing gold coin in the shape of sovereigns and half-sovereigns, also issue gold bullion, partly for the use of local manufacturers (jewellers and dentists), and partly for export, India taking annually a considerable quantity of gold cast into 10-oz. bars. The issues during 1906 are shewn in the table below:—

ISSUES OF GOLD DURING 1906.

Mint.	Coin.			Bullion.	Total.
	Sovereigns.	Half-sovereigns.	Total.		
	£	£	£	£	£
Sydney ...	2,792,000	154,000	2,946,000	662,277	3,608,277
Melbourne ...	3,657,853	41,021	3,698,874	400,820	4,099,694
Perth	4,829,817	...	4,829,817	514,904	5,344,721
Total ...	11,279,670	195,021	11,474,691	1,578,001	13,052,692

In addition to the issue of gold the Sydney and Melbourne Mints are also charged with the issue of silver and bronze coin struck in London. The total value of silver coin issued in 1906 was £105,000, viz.—£39,400 in half-crowns, £19,400 in florins, £17,200 in shillings, £14,200 in sixpences, and £14,800 in threepences. The value of bronze coin issued was £7480, viz., £5180 in pence and £2300 in halfpence.

(iv.) *Withdrawals of Worn Coin.* The mints receive light and worn coin for recoinage, gold being coined locally, while silver is forwarded to London. The value of gold coin so received in 1906 amounted to only £938, viz.—Sydney, £426; Melbourne, £511; and Perth, £1. The value of worn silver coins received during 1906 was £19,181, viz.—Sydney, £6898; Melbourne, £12,283.

3. **Total Receipts and Issues.** (i.) *Receipts.* The total quantities of gold received at the three mints since their establishment are stated in the gross as follows:—Sydney, 31,626,739 ozs.; Melbourne, 30,015,938 ozs.; and Perth, 8,791,548 ozs. As the mints pay for standard gold (22 carats) at the rate of £3 17s. 10½d. per oz., which corresponds to a value of £4 4s. 11$\frac{5}{11}$d. per oz. fine (24 carats), it is possible to arrive at the number of fine ounces received from the amounts paid for the gold received. These amounts were:—Sydney, £116,542,968; Melbourne, £118,352,487; Perth, £31,132,187; corresponding to—Sydney, 27,436,545 ozs. fine; Melbourne, 27,862,542 ozs. fine; and Perth, 7,329,139 ozs. fine. Silver found in assaying is paid for if it exceeds 8 per cent.; in Sydney it has been paid for at the rate of one shilling and sixpence per oz. fine since 12th May, 1902; in Melbourne the price is fixed monthly by the Deputy-master of the Mint; and in the Perth accounts it has been taken at one shilling per oz. The total amount paid for silver by the Sydney Mint is given as £233,565.

(ii.) *Issues.* The total values of gold coin and bullion issued by the three mints were as follow:—

TOTAL ISSUES OF GOLD.

Mint.	Coin.			Bullion.	Total.
	Sovereigns.	Half-sovs.	Total.		
	£	£	£	£	£
Sydney	107,863,500	3,179,000	111,042,500	5,509,390	116,551,890
Melbourne ...	108,814,708	588,384	109,403,092	8,945,743	118,348,835
Perth	28,643,085	89,703	28,732,788	2,393,729	31,126,517
Total ...	245,321,293	3,857,087	249,178,380	16,848,862	266,027,242

It may be said that about one-half of the total gold production of Australasia has passed through the three Australian mints, the production of the Commonwealth States to the end of 1906 being valued at £474,913,048, and that of New Zealand at £69,501,488, or a total of £544,414,536.

The total issues of silver coins to the end of 1906 were £1,962,000, viz.:—Crowns, £3500; double florins, £4585; half-crowns, £591,400; florins, £408,615; shillings, £510,600; sixpences, £198,020; and threepences, £245,280.

Bronze coins to the value of £125,550 were issued, viz.:—Pence, £87,040; halfpence, £38,410; and farthings, £100.

(iii.) *Withdrawals of Worn Coin.* Complete figures as to the withdrawal of gold coin can only be given for the Sydney Mint, where they amounted to £827,895; at the Melbourne Mint the coins withdrawn since 1890 were worth £44,362, and no figures are given for Perth.

Withdrawals of worn silver coin amounted to £236,770 in Sydney, and to £321,775 in Melbourne.

4. **Standard Weight and Fineness of Coinage.**—The coinage of the Commonwealth is the same as that of the United Kingdom, and the same provisions as to legal tender hold good, viz., while gold coins are legal tender to any amount, silver coins are only so for an amount not exceeding forty shillings, and bronze coins up to one shilling. As will be seen from the table below, the standard weights of the sovereign and half-sovereign are respectively 123.27447 grains and 61.63723 grains, but these coins will pass current if they do not fall below 122.5 grains and 61.125 grains respectively.

STANDARD WEIGHT AND FINENESS.

Denomination.	Standard Weight.	Standard Fineness.
GOLD—	Grains.	
Sovereign	123.27447	Eleven-twelfths fine gold, viz.:— Gold ... 0.91667 Alloy ... 0.08333 1.00000
Half-sovereign ...	61.63723	
SILVER—		
Crown	436.36363	Thirty-seven-fortieths fine silver, viz.:— Silver ... 0.925 Alloy ... 0.075 1.000
Double florin ...	349.09090	
Half-crown	218.18181	
Florin	174.54545	
Shilling	87.27272	
Sixpence	43.63636	
Threepence	21.81818	
BRONZE—		
Penny	145.83333	Mixed metal, viz.:— Copper ... 0.95 Tin ... 0.04 Zinc ... 0.01 1.00
Half-penny	87.50000	
Farthing	43.75000	

5. **Prices of Silver and Australian Coinage.**—(i.) *Prices of Silver.* The value of silver has greatly decreased since its demonetisation and restricted coinage in almost the whole of Europe. Its average price in the London market is shewn in the subjoined table:—

AVERAGE PRICE OF SILVER IN LONDON MARKET, 1873 TO 1906.

Year.	Price per Standard Oz.	Year	Price per Standard Oz.	Year.	Price per Standard Oz.
	d.		d.		d.
1873 ...	59.2500	1885 ...	48.6250	1897 ...	27.5625
1874 ...	58.3125	1886 ...	45.3750	1898 ...	26.9375
1875 ...	56.8125	1887 ...	44.6250	1899 ...	27.5000
1876 ...	53.0000	1888 ...	42.8750	1900 ...	28.3125
1877 ...	54.7500	1889 ...	42.6875	1901 ...	27.2500
1878 ...	52.5625	1890 ...	47.7500	1902 ...	24.1250
1879 ...	51.1875	1891 ...	45.0625	1903 ...	24.7500
1880 ...	52.2500	1892 ...	39.8125	1904 ...	26.3750
1881 ...	51.7500	1893 ...	35.6250	1905 ...	27.8125
1882 ...	51.8125	1894 ...	29.0000	1906 ...	30.8750
1883 ...	50.5625	1895 ...	29.8750		
1884 ...	50.6875	1896 ...	30.7500		

The monthly fluctuations during the year 1906 were as follows:—

AVERAGE PRICE OF SILVER IN LONDON MARKET, 1906.

Month.	Price per Standard Oz.	Month.	Price per Standard Oz.	Month.	Price per Standard Oz.
	d.		d.		d.
January ...	30.1250	May ...	30.9375	September ...	31.5000
February ...	30.4375	June ...	30.1875	October ...	32.1250
March ...	29.8750	July ...	30.1250	November ...	32.6875
April ...	30.0000	August ...	30.5000	December ...	32.0000

(ii.) *Profits on Coinage of Silver.* As sixty-six shillings are coined out of one pound troy of standard silver, the silver required to produce £3 6s. of coin was only worth £1 10s. 10½d. during 1906; the difference of £1 15s. 1½d. represents, therefore, the gross profit or seigniorage made on the coinage of every £3 6s. This gross profit is equivalent to about 53 per cent., but from it the expenses of coining (including interest on cost of machinery) and of withdrawals of worn coin must be deducted. Still, given a large annual demand for new silver coin, even the net profit amounts to a considerable sum. Negotiations therefore, took, place for a number of years between the Imperial authorities and the Governments of New South Wales and Victoria, which in 1898 resulted in permission being granted to the two Governments named to coin silver and bronze coin at the Sydney and Melbourne Mints for circulation in Australia. No steps were, however, taken in the matter, and as section 51 of the Commonwealth Constitution makes legislation concerning "currency, coinage, and legal tender" a federal matter, the question has remained in abeyance until such time as the Federal Parliament shall have come to a decision in regard to the introduction of a decimal coinage.

6. **Decimal Coinage.**—Considered apart from the cognate subject of decimal weights and measures, the introduction of a decimal coinage would present no great difficulties. Of the various systems that have been advocated from time to time, the one that appears to meet with most favour and presents the maximum advantage, would retain the sovereign as the unit, but would divide it into a thousand parts instead of the present 960 farthings. In such a system there would be the following coins (adopting the name of "cent" for the hundredth part of the sovereign):—Sovereign=100c. (gold); half-sovereign=50c. (gold), 20c.=4s. (gold or silver); 10c.=2s. (silver); 5c.=1s. (silver); 2c.=4.8d. (silver); 1c.=2.4d. (silver or nickel); 0.5c. or 5 mils.=1.2d. (nickel or bronze); 0.2c. or 2 mils.=0.48d. (nickel or bronze); 0.1c. or 1 mil.=0.24d. (bronze). As only the subdivisions of the present shilling would be altered, such a system could be

introduced with less disturbing effects on the arrangements of trade than other proposals, *e.g.*, one which would make the present farthing its unit.

7. **Circulation of Specie.**—Many conflicting estimates have from time to time been made as to the amount of coin in private hands. In 1892 the general manager of one of the Sydney banks estimated the coin in private hands in New South Wales at only £725,000, while the estimate of the Deputy-master of the Mint for the same period was £4,416,000, the truth lying, no doubt, somewhere between those two estimates. In 1906 the Deputy-master of the Perth Mint conducted an enquiry with the object of obtaining information on the condition of the currency in Australia. His estimate was—sovereigns, £2,500,000; half-sovereigns, £500,000; silver and bronze coin, £1,200,000. This estimate appears, however, very low, amounting only to a little over £1 per head of population. The question will shortly have to be considered whether it would not be possible to obtain accurate information by means of a question on the census schedule to be used in 1911. The coin in private hands amounts, however, only to a comparatively small part of the total coin in the country, the value of coin held by the banks during the quarter ended 30th June, 1907, being £22,420,395. To the active currency must be added the notes in circulation, which for the same period amounted to £3,563,181, exclusive of Queensland Treasury notes, £1,490,869, viz., £769,932 held by banks, and £720,937 in circulation.

8. **Imports and Exports of Coin and Bullion.**—A table is appended shewing the imports into, and exports from, the Commonwealth of coin and bullion during the year 1906, distinguishing the countries of import and export:—

IMPORTS AND EXPORTS OF COIN AND BULLION, 1906.

Countries from which Imported and to which Exported.	Coin.				Bullion.			Total Coin and Bullion.
	Gold.	Silver.	Bronze.	Total Coin.	Gold.[1]	Silver.[2]	Total Bullion.	
IMPORTS.	£	£	£	£	£	£	£	£
United Kingdom ...	...	129,250	8,403	137,653	359	53	412	138,065
New Guinea	...	...	...	...	46,484	...	46,484	46,484
New Zealand	80,900	9,653	...	90,553	2,018,998	33,844	2,052,842	2,143,395
Germany	10	1,844	...	1,854	...	...	...	1,854
Hawaii	500	...	...	500	...	...	...	500
South Sea Islands ...	380	17	...	397	...	...	...	397
United States of Amer.	...	...	...	..	222	...	222	222
Total Imports ...	81,790	140,764	8,403	230,957	2,066,063	33,897	2,099,960	2,330,917
EXPORTS.								
United Kingdom ...	3,028,704	600	...	3,029,304	3,201,378	190,314	3,391,692	6,420,996
Canada	660,000	...	...	660,000	...	...	...	660,000
Ceylon	3,060,000	...	...	3,060,000	101,952	366,870	468,822	3,528,822
Fanning Island ...	800	...	...	800	...	...	...	800
Fiji	51,000	5,900	..	56,900	...	...	...	56,900
Hong Kong	360,616	...	..	360,616	2,496	...	2,496	363,112
India	939,737	...	...	939,737	1,503,819	218,220	1,722,039	2,661,776
New Guinea	65	32	3	100	..	...	...	100
New Zealand	830,000	13,500	250	843,750	...	...	...	843,750
Straits Settlements ..	80,055	...	...	80,055	...	...	...	80,055
Belgium	..	...	...	...	135	...	135	135
China	6,100	...	...	6,100	...	..	..	6,100
France ...	826	419	...	1,245	562	...	562	1,807
Germany	...	..	...	...	1,101	60	1,161	1,161
Japan	700,000	..	..	700,000	...	...	...	700,000
Marshall Islands ...	...	1,666	...	1,666	...	...	...	1,666
New Caledonia ...	1,030	110	...	1,140		...	...	1,140
New Hebrides ...	205	1,024	...	1,229	..	...	...	1,229
South Sea Islands ..	1,547	270	...	1,817	...	...	...	1,817
United States of Amer.	2,195,000	...	...	2,195,000	144,157	39,410	183,567	2,378,567
Total Exports ..	11,915,685[3]	23,521[4]	253[4]	11,939,459	4,955,600[5]	814,874[6]	5,770,474	17,709,933

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1. Bullion, bars, dust, ingots, and sheets. 2. Bullion, bars, ingots, sheets, and silver contained in matte. 3. Approximately £9,851,558 Australian produce and £2,064,127 other produce. The net value of gold bullion and gold ore of foreign origin introduced (by transfer or importation) into the minting States of the Commonwealth, with the addition of the imports of foreign coin, has been taken to represent the value of the exports of coin of other than Australian origin. 4. Other produce. 5. Australian produce. 6. Australian produce, £777,672; other produce, £37,196.

§ 2. Banking.

1. **Banking Facilities.**—(i.) *Head Offices of Banks.* Of the twenty-one banks trading in the Commonwealth, four have their head offices in London, viz., the Bank of Australasia; the Union Bank of Australia Limited; the English, Scottish, and Australian Bank Limited; and the London Bank of Australia Limited. The head offices of the following four banks are in Sydney—The Bank of New South Wales; the Commercial Banking Company of Sydney Limited; the Australian Joint Stock Bank Limited; and the City Bank of Sydney. Five banks have their head offices in Melbourne, viz., the National Bank of Australasia Limited; the Commercial Bank of Australia Limited; the Bank of Victoria Limited; the Colonial Bank of Australasia Limited; and the Royal Bank of Australia Limited. Brisbane is the headquarters of three banks, viz., the Queensland National Bank Limited; the Royal Bank of Queensland Limited; and the Bank of North Queensland Limited. Only one Bank has at present its head office in Adelaide, viz., the Bank of Adelaide; and one in Perth, viz., the Western Australian Bank. Of the two Tasmanian banks the Commercial Bank of Tasmania Limited has its head office in Hobart, and the National Bank of Tasmania Limited in Launceston. The remaining bank, the Bank of New Zealand, has its headquarters in Wellington. It is proposed, in the few instances where the banks are referred to by name, to arrange them in the order just given.

(ii.) *Establishments in Different States.* Only three of the banks have establishments in all six States of the Commonwealth, the total number of their branches and sub-branches being 468. One bank with a total of 194 branches is trading in five States, and two with 267 branches are established in four States. One bank has sixty-nine branches distributed over three States, while five banks with a total of 324 branches confine their operations to two States. The remaining nine banks, with 373 branches, trade only within the State where their head offices are located. Of this total of 1697 banking establishments, New South Wales contains 512; Victoria, 612; Queensland, 222; South Australia, 178; Western Australia, 123; and Tasmania, 50. The total for the Commonwealth amounts to about one bank to every 2500 inhabitants, which does not appear out of proportion when the general sparseness of the Australian population is taken into consideration. There is, however, a difference between the various States which is not easy of explanation, but which seems to be due chiefly to the desire of a few of the banks to open up branches wherever there is a prospect of a small amount of business, while other banks are more conservative in this respect. Thus the proportion in New South Wales is about 3000 inhabitants per bank, while in Victoria it is only 2000. In Western Australia, where the proportion amounts to one in 1500, there are, of course, exceptional circumstances which explain this apparent disproportion.

2. **Banking Legislation.**—Under section 51 of the Commonwealth Constitution Act the Commonwealth Parliament has power to legislate with respect to "Banking, other than State banking; also State banking extending beyond the limits of the State concerned, the incorporation of banks, and the issue of paper money." Up to the present no Commonwealth banking legislation has, however, been passed, and the various State laws under which the banks transact business are in most cases so old as to be quite unsuitable to modern methods of banking. Under the existing laws banks are required to furnish quarterly statements of their average assets and liabilities, but these statements are not equally complete in all the States. Still, together with the periodical balance-sheets (generally half-yearly, but in a few cases yearly), these quarterly statements are at present the only information available in regard to banking business.

The Acts under which the various banks are incorporated are numerous, but it may be stated that while most of the older banks were incorporated by special Acts, *e.g.*, the Bank of New South Wales, by Act of Council 1817; the Bank of Australasia, by Royal

Charter; the Bank of Adelaide, by Act of the South Australian Parliament; and the Bank of New Zealand, by Act of the General Assembly of New Zealand; the newer banks are generally registered under a "Companies Act," or some equivalent Act. This is also the case with those banks which, after the crisis of 1893, were reconstructed.

3. **Capital Resources of Banks.**—The paid-up capital of the twenty-one banks, together with their reserve funds, and the rate per cent. and the amount of their last dividends, is shewn in the table hereunder. The information relates to the balance-sheet last preceding the 30th June, 1907, and where alterations have taken place since that date these are indicated by notes. In regard to the reserve funds it must be stated that in the case of some of the banks these are invested in Government securities, while in other cases they are used in the ordinary business of the banks, and in a few instances they are partly invested and partly used in business:—

CAPITAL RESOURCES OF BANKS.

Bank.	Paid-up Capital	Rate per cent. per annum of last Dividend and Bonus.	Amoun't of last Dividend & Bonus.	Reserve Fund.
	£	%	£	£
Bank of Australasia	1,600,000	14	112,000	1,326,800
Union Bank of Australia Limited	1,500,000	14	105,000	1,256,406
English, Scottish, and Australian Bank Limited ...	539,437	4½	24,275	162,908
London Bank of Australia Limited	548,015[1]	5½ Preferential 2½ Ordinary	18,654	33,908
Bank of New South Wales	2,000,000[2]	10	100,000	1,500,000[3]
Commercial Banking Company of Sydney Limited	1,213,566	10	50,000	1,220,373
Australian Joint Stock Bank Limited	154,570	...	...	12,933
City Bank of Sydney	400,000	2½	5,000	10,054
National Bank of Australasia Limited	1,498,220[4]	5	37,455	157,360
Commercial Bank of Australia Limited	2,212,819[5]	3 Preferential ... Ordinary	31,760	13,825
Bank of Victoria, Limited	1,478,010[6]	5	36,950	180,000
Colonial Bank of Australasia Limited	439,280	6	13,178	109,504
Royal Bank of Australia Limited...	200,000	7	5,687	77,883
Queensland National Bank Limited	413,289[7]	3	12,000	36,934
Royal Bank of Queensland Limited	467,581	4	9,277	70,146
Bank of North Queensland Limited	100,000	2½	1,250	20,000
Bank of Adelaide	400,000	9	18,000	312,735
Western Australian Bank	150,000	20	15,000	398,324
Commercial Bank of Tasmania Limited	150,000[8]	12	9,000	147,500[9]
National Bank of Tasmania Limited	152,040	6	4,561	35,000
Bank of New Zealand	1,000,000[10]	7½ Preferential 10 Ordinary	87,500	250,000
Total	16,616,827	...	...	7,332,593

1. £171,930 preferential, £376,085 ordinary. 2. Now increased to £2,500,000, of which £2,425,400 actually paid up, and £74,600 in course of being paid up. 3. Now increased to £1,530,000. 4. £305,780 Preferential; £1,192,440 ordinary. 5. £2,117,350 Preferential; £95,469 Ordinary. 6 £416,760 Preferential; £1,061,250 Ordinary. 7. After deducting £46,865 paid on forfeited shares. 8. Now increased to £175,000. 9. Now increased to £175,000. 10. £500,000 preference shares issued to the Crown under the "Bank of New Zealand Act, 1903," £500,000 ordinary shares. There is in addition £1,000,000 4 per cent. guaranteed stock.

4. **Liabilities and Assets of Banks.**—(i.) *Liabilities of Banks for Quarter ended 30th June, 1907.* As already stated, the banks transacting business in any State are obliged, under the existing State laws, to furnish a quarterly statement of their assets and liabilities, which contains the averages of the weekly statements prepared by the bank for that purpose. As all other financial returns in this work embrace, so far as possible, a period ended 30th June, 1907, it seems advisable to give the banking figures for the quarter ended on that date, and, where they are shewn for a series of years, similarly to use the figures for the June quarter of each year. The liabilities are liabilities to the general public, and are exclusive of the banks' liabilities to their shareholders, which are shewn in the preceding table:—

AVERAGE LIABILITIES OF BANKS IN EACH STATE OF THE COMMONWEALTH FOR THE QUARTER ENDED 30TH JUNE, 1907.

State.	Notes in Circulation, not bearing interest.	Bills in Circulation, not bearing interest.	Balances Due to other Banks.	Deposits.			Total Liabilities
				Not Bearing Interest.	Bearing Interest.	Total.	
	£	£	£	£	£	£	£
New South Wales	1,684,744	271,687	83,826	18,683,985	23,283,280	41,967,265	44,007,522
Victoria ...	911,603	288,748	164,320	14,012,252	24,380,927	38,393,179	39,757,850
Queensland ...	—	171,790	62,873	5,652,238	9,200,346	14,852,584	15,087,247
South Australia	476,605	26,270	40,809	3,410,845	4,836,521	8,247,366	8,791,050
West. Australia	327,611	25,793	92,632	3,283,755	2,216,357	5,500,112	5,946,148
Tasmania ..	162,618	17,590	—	1,788,159	1,999,304	3,737,463	3,917,671
Commonwealth	3,563,181	801,878	444,460	46,781,234	65,916,735	112,697,969	117,507,488

(ii.) *Assets of Banks for Quarter ended 30th June, 1907.* The average assets of the banks are shewn in the following table, in which, in the case of the banks doing business in Tasmania, the column headed "coined gold," etc., includes any bullion which may have been held by the banks:—

AVERAGE ASSETS OF BANKS IN EACH STATE OF THE COMMONWEALTH FOR THE QUARTER ENDED 30TH JUNE, 1907.

State.	Coined Gold and Silver and other Metals.	Gold and Silver in Bullion or Bars.	Landed and other Property.	Notes and Bills of other Banks.	Balances Due from other Banks.	All other Debts Due to the Banks.	Total Assets.
	£	£	£	£	£	£	£
N.S.W. ...	8,965,899	162,008	1,777,305	340,559	468,204	34,460,993	46,174,968
Victoria ...	6,968,370	369,617	1,850,728	323,228	238,778	31,894,070	41,644,791
Queensland	1,924,004	178,398	716,493	59,878	215,828	15,076,455	18,171,056
S. Australia	1,808,942	7,724	383,589	66,411	67,727	5,545,346	7,879,739
W. Australia	1,995,846	573,286	196,929	50,141	33,013	5,140,911	7,990,126
Tasmania ...	757,334	...	103,335	...	146,726	2,872,660	3,880,055
C'wealth ...	22,420,395	1,291,033	5,028,379	840,217	1,170,276	94,990,435	125,740,735

(iii.) *Liabilities of Banks for June Quarter, 1901 to 1907.* In the subjoined table, which shews the average liabilities of the banks for the quarter ended 30th June, 1901 to 1907, for the Commonwealth as a whole, it will be seen that the growth in total liabilities is almost entirely due to an increase in the deposits, and that deposits not bearing interest and deposits bearing interest have shared in that increase very equally:—

AVERAGE LIABILITIES OF BANKS IN THE COMMONWEALTH FOR THE QUARTER ENDED 30TH JUNE, IN THE YEARS 1901 TO 1907.

Year.	Notes in Circulation not Bearing Interest.	Bills in Circulation not Bearing Interest.	Balances due to other Banks.	Deposits.			Total Liabilities.
				Not Bearing Interest.	Bearing Interest.	Total.	
	£	£	£	£	£	£	£
1901	3,399,462	525,958	376,972	37,457,960	54,029,188	91,487,148	95,789,540
1902	3,305,135	518,504	459,255	37,727,861	55,708,373	93,436,234	97,719,128
1903	3,315,747	539,132	407,947	37,056,187	54,701,047	91,757,234	96,020,060
1904	3,133,268	521,267	290,441	35,630,255	55,917,848	91,548,103	95,493,079
1905	3,036,879	555,256	446,555	36,847,610	61,295,775	98,143,385	102,182,075
1906	3,244,256	568,670	577,094	41,036,116	65,479,150	106,515,266	110,905,286
1907	3,563,181	801,878	444,460	46,781,234	65,916,735	112,697,969	117,507,488

(iv.) *Assets of Banks for June Quarter, 1901 to 1907.* A similar table shewing the average assets of the banks for the June quarters of each of the years 1901 to 1907 is shewn below. Bullion, in the case of the Tasmanian banks, is again included with coin :—

AVERAGE ASSETS OF BANKS IN THE COMMONWEALTH FOR THE QUARTER ENDED 30TH JUNE IN THE YEARS 1901 TO 1907.

Year.	Coined Gold and Silver and other Metals.	Gold and Silver in Bullion or Bars.	Landed and other Property.	Notes and Bills of other Banks.	Balances Due from other Banks.	All other Debts Due to the Banks.	Total Assets.
	£	£	£	£	£	£	£
1901 ...	18,581,224	1,199,304	6,145,742	695,676	1,215,701	93,710,166	121,547,818
1902 ...	19,744,914	1,330,304	5,337,277	656,302	1,152,534	94,015,098	122,236,429
1903 ...	18,513,784	1,507,825	5,289,440	741,977	1,115,369	93,301,160	120,469,555
1904 ...	17,910,771	1,447,698	5,245,312	692,688	781,368	87,705,222	113,783,059
1905 ...	19,988,465	1,501,890	5,212,799	705,089	809,929	85,766,259	113,984,431
1906 ...	21,268,679	1,412,763	5,160,875	802,225	1,234,921	87,889,121	117,768,584
1907 ...	22,420,395	1,291,033	5,028,379	840,217	1,170,276	94,990,435	125,740,735

The figures do not call for much comment. As the table shews, the increase in the total amount of assets is mainly due to an increase in the amount of specie held by the banks against liabilities at call.

5. **Percentage of Coin and Bullion to Liabilities at Call.**—(i.) *Commonwealth.* Although it is not strictly correct to assume that the division of deposits into those bearing interest and not bearing interest would in every case coincide with a division into fixed deposits and current accounts, the division, in default of a better one, must be adopted, and in the following table "liabilities at call" are therefore understood to include the note circulation of the banks and the deposits not bearing interest:—

PERCENTAGE OF COIN AND BULLION TO LIABILITIES AT CALL, COMMONWEALTH, 1901 TO 1907.

Year.	Liabilities at Call.			Coin and Bullion.			Percentage of Coin and Bullion to Liabiliti's at Call.
	Notes in Circulation.	Deposits not Bearing Interest.	Total.	Coin.	Bullion.	Total.	
	£	£	£	£	£	£	%
1901 ...	3,399,462	37,457,960	40,857,422	18,581,224	1,199,304	19,780,528	48.41
1902 ...	3,305,135	37,727,861	41,032,996	19,744,914	1,330,304	21,075,218	51.36
1903 ...	3,315,747	37,056,187	40,371,934	18,513,784	1,507,825	20,021,609	49.59
1904 ...	3,133,747	35,630,255	38,764,002	17,910,771	1,447,698	19,358,469	49.94
1905 ...	3,036,879	36,847,610	39,884,489	19,988,465	1,501,890	21,490,355	53.88
1906 ...	3,244,256	41,036,116	44,280,372	21,268,679	1,412,763	22,681,442	51.22
1907 ...	3,563,181	46,781,234	50,344,415	22,420,395	1,291,033	23,711,428	47.10

It would appear from the figures just given that the banks generally consider it advisable to hold about half the amount of liabilities at call in coin and bullion. The drop to 47.10 per cent. in 1907 is due to the very large increase in the amount of deposits during the year, with which the increase in the coin and bullion held, considerable though it was, did not keep pace.

(ii.) *Queensland Treasury Notes.* No bank-notes are issued by any of the banks in Queensland, where a Treasury note has taken the place of bank-notes since 1893. These Treasury notes are disregarded in the quarterly statements of the banks; according to Treasury returns the amount outstanding on 30th June, 1907, was £1,490,869, of which £720,937 was in circulation, while the balance of £769,932 was held by the banks.

(iii.) *States.* The proportion of coin and bullion to liabilities at call varies considerably in the different States, and is generally highest in Western Australia, and lowest in Queensland and Tasmania. A table is appended shewing the percentages for each State for the quarter ended 30th June, 1901 to 1907:—

PERCENTAGE OF COIN AND BULLION TO LIABILITIES AT CALL, STATES AND COMMONWEALTH, 1901 TO 1907.

State.	1901.	1902.	1903.	1904.	1905.	1906.	1907.
	%	%	%	%	%	%	%
New South Wales ...	45.96	46.97	47.47	48.67	50.51	48.49	44.81
Victoria	47.82	51.91	50.58	52.92	58.01	53.55	49.17
Queensland... ...	40.95	44.42	46.33	39.66	45.78	40.43	37.20
South Australia ...	54.94	57.67	50.12	51.45	55.66	51.25	46.73
Western Australia ...	71.59	80.46	61.83	58.70	67.35	73.98	71.14
Tasmania	37.49	35.12	42.20	46.41	44.25	42.39	39.84
Commonwealth ...	48.41	51.36	49.59	49.94	53.88	51.22	47.10

6. **Deposits and Advances.**—(i.) *Total Deposits.* The total amount of deposits held by the banks shews a steady advance during the period under review, although the totals for 1903 and 1904, when the country was slowly recovering from the effects of the drought, were slightly below those for 1902:—

TOTAL DEPOSITS IN BANKS, STATES AND COMMONWEALTH, 1901 TO 1907.

State.	1901.	1902.	1903.	1904.	1905.	1906.	1907.
	£	£	£	£	£	£	£
New South Wales ...	33,118,860	34,382,531	33,309,691	33,058,342	35,972,265	39,099,630	41,967,265
Victoria	30,991,038	30,839,444	30,719,334	31,188,971	33,642,092	36,764,392	38,393,179
Queensland ...	13,525,489	13,795,737	12,645,725	12,626,184	12,987,859	13,665,110	14,352,584
South Australia ...	6,270,396	6,212,957	6,603,225	6,375,267	6,892,103	7,513,802	8,247,366
Western Australia ...	4,402,519	4,742,579	4,785,839	4,726,158	4,999,650	5,645,701	5,500,112
Tasmania	3,178,846	3,462,986	3,693,420	3,573,181	3,649,416	3,826,631	3,737,463
Commonwealth ...	91,487,148	93,436,234	91,757,234	91,548,103	98,143,385	106,515,266	112,697,969

(ii.) *Deposits per Head of Population.* To shew the extent to which the population makes use of the banking facilities afforded to it, a table is given hereunder shewing the amount of total deposits per head of mean population for each of the years 1901 to 1907. The figures must not be taken to shew part of the savings of the people, as a large proportion of the deposits is non-interest-bearing and therefore presumably used in the business of the banks' customers, together with a small part of the interest-bearing deposits:—

DEPOSITS PER HEAD OF POPULATION, STATES AND COMMONWEALTH. 1901 TO 1907.

State.	1901.			1902.			1903.			1904.			1905.			1906.			1907.		
	£	s.	d	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
New South Wales	24	6	5	24	14	4	23	10	7	22	18	8	24	8	1	25	17	11	27	1	2
Victoria	25	14	9	25	9	8	25	8	7	25	17	2	27	15	7	30	1	3	30	0	10
Queensland	26	18	8	27	0	5	24	13	3	24	5	8	24	13	6	25	11	10	27	7	9
South Australia	17	7	0	17	1	8	18	1	10	17	5	5	18	8	3	19	15	7	21	6	3
Western Australia	23	5	11	22	18	2	21	11	2	19	17	2	19	18	0	21	13	0	20	16	3
Tasmania	18	10	5	20	0	8	20	17	5	20	1	8	20	10	2	21	10	7	21	2	9
Commonwealth ...	24	2	9	24	4	8	23	10	6	23	3	3	24	8	11	26	1	6	27	2	1

(iii.) *Total Advances.* In the quarterly statements furnished by the banks the column headed "all other debts due to the banks," which averages from 75 to 80 per cent. of the total assets, is made up of such miscellaneous items as bills discounted, promissory notes discounted, overdrafts on personal security, overdrafts secured by deposit of deeds or by mortgage, etc. Under present circumstances it is impossible to separate these items, and the total amounts contained in the column must, therefore, be treated as advances. The following table shews the totals for each State during the years 1901 to 1907:—

ADVANCES BY BANKS, STATES AND COMMONWEALTH, 1901 TO 1907.

State.	1901.	1902.	1903.	1904.	1905.	1906.	1907.
	£	£	£	£	£	£	£
New South Wales ...	39,194,344	39,797,960	38,658,565	33,237,755	31,965,017	32,057,192	34,460,993
Victoria	30,958,243	30,446,032	29,905,949	29,426,052	28,593,201	29,699,683	31,894,070
Queensland	13,568,589	13,633,376	14,082,725	13,974,233	13,590,333	13,850,921	15,076,455
South Australia ...	4,332,730	4,434,031	4,428,983	4,401,991	4,793,936	5,053,184	5,545,346
Western Australia ...	3,117,818	3,276,409	3,683,451	3,955,108	4,172,983	4,635,624	5,140,911
Tasmania	2,538,412	2,397,290	2,541,487	2,710,083	2,650,789	2,592,517	2,872,660
Commonwealth ...	93,710,106	93,985,098	93,301,160	87,705,222	85,766,259	87,889,121	94,990,485

(iv.) *Proportion of Advances to Deposits.* The percentage borne by advances to total deposits shews to what extent the needs of one State have to be supplied by the resources of another State, and where the percentage for the Commonwealth as a whole exceeds 100, as it did in 1901, 1902, and 1903, the banks must have supplied the deficiency from their own resources, or from deposits obtained outside the Commonwealth. The figures shew, however, that the banking business of the Commonwealth has been practically self-contained during the period under review:—

PERCENTAGE OF ADVANCES TO TOTAL DEPOSITS, STATES AND COMMONWEALTH, 1901 TO 1907:—

State	1901.	1902.	1903	1904.	1905.	1906.	1907.
	%	%	%	%	%	%	%
New South Wales ...	118.34	115.75	116.06	100.54	88.86	81.99	82.11
Victoria	99.89	98.72	97.35	94.35	84.99	80.78	83.07
Queensland... ...	100.32	98.82	111.36	110.68	104.64	101.36	101.51
South Australia ...	69.10	71.37	67.07	69.05	69.56	67.25	67.24
Western Australia ...	70.82	69.08	76.97	83.69	83.47	82.11	93.47
Tasmania	79.85	69.23	68.81	75.85	72.64	67.75	76.86
Commonwealth ...	102.43	100.59	101.68	95.80	87.39	82.51	84.29

7. *Clearing Houses.* The Sydney Banks' Exchange Settlement and the Melbourne Clearing House, at which two institutions settlements are effected daily between the banks doing business in New South Wales and Victoria respectively, publish figures of the weekly clearances effected. From these figures it appears that in 1907 the total clearances in Sydney amounted to £234,169,822, and in Melbourne to £234,928,727. Owing to the different distribution of the banking business in the two cities these figures do not, however, afford a fair comparison of the volume of banking business transacted in Sydney and Melbourne.

§ 3. Financial Companies.

1. **Pastoral Companies.**—A number of large companies transact business in the Commonwealth, which in many respects is very nearly akin to ordinary banking business. The liabilities of these companies are, however, represented by paid-up capital and debentures, together with reserve funds, mortgages, and direct and contingent liabilities. In direct liabilities bills payable, accrued interest, and current accounts are included. The companies to which the following figures refer are:—The Australian Estates and Mortgage Company Limited, the Australasian Mortgage and Agency Company Limited, the Australian Mortgage, Land, and Finance Company Limited, Dalgety and Co. Limited, Goldsbrough, Mort and Co. Limited, and the New Zealand Loan and Mercantile Agency Company Limited. The figures refer to the last-published balance-sheets, and are inclusive of New Zealand business:—

ACCOUNTS OF PASTORAL COMPANIES.

Capital paid up	£3,991,009
Debenture indebtedness	12,141,979
All other liabilities	4,785,325
Total	£20,918,313
Advances	£12,582,065
Net profits for the year after paying interest ...	£583,309
Amount of dividends to shareholders	£170,965

2. **Trustees, Executors, and Agency Companies.**—Returns are available of seven Victorian, two New South Wales, one Queensland, one South Australian, one Western Australian, and two Tasmanian companies. The paid-up capital of these fourteen companies amounted to £404,422; reserve funds and undivided profits to £211,853; other liabilities, £67,589; total liabilities, £683,864. Among the assets are included:—Deposits with Governments, £162,500; other investments in public securities, fixed deposits, etc., £94,862; loans on mortgage, £142,797; property owned, £170,982; other assets, £112,723. The net profits for the year were £60,881, and the amount of dividends and bonus £31,785. Returns as to the amount at credit of estates represented by assets are only available for eight companies, viz.:—Three Victorian, two New South Wales, one Queensland, one South Australian, and one Tasmanian. They amount to the following large sums:—

Victoria	£11,980,363	South Australia	£1,825,699
New South Wales ...	8,819,460	Tasmania	501,355
Queensland	1,563,191	Commonwealth	£24,690,068

Probably £6,000,000 would at the least have to be added to this amount for the remaining six companies, so that the total amount is probably not far short of £31,000,000. None of these companies receive deposits, and advances are only made under exceptional circumstances, and to a very limited extent, the total so shewn in the last balance-sheets being only £31,334.

§ 4. Savings Banks.

1. **General.**—The total number of savings banks, with their branches and agencies, in the Commonwealth, closely approximates to that of banks of issue, and was at the middle of 1907, 1628, distributed as follows:—New South Wales, 624; Victoria, 385; Queensland, 195; South Australia, 163; Western Australia, 123; and Tasmania, 138.

In the following tables the figures for Victoria, Queensland, South Australia and Western Australia refer to financial years ended 30th June, and those of New South Wales to calendar years ended 31st December next preceding. In the case of Tasmania figures for the two joint-stock savings banks are made up to the last day of February in each year, and those for the Government Savings Bank to the 31st December, except in 1906-7, where they relate to the year ended 30th June.

2. **Depositors.**—The total number of depositors, *i.e.*, of persons having accounts open, not of those making deposits, in each of the last seven years is shewn in the following table:—

NUMBER OF DEPOSITORS IN SAVINGS BANKS, 1900-1 TO 1906-7.

State.	1900-1.	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.
N.S.W. ...	282,643	306,311	323,212	331,956	355,824	364,039	392,050
Victoria ...	393,026	410,126	418,511	432,867	447,382	466,752	491,318
Queensland ...	81,025	84,685	80,043	80,959	84,165	88,026	92,912
South Australia	126,032	132,084	137,147	141,572	146,866	152,487	161,855
West. Australia	39,318	45,108	48,008	54,873	59,764	63,573	66,737
Tasmania ...	42,509	44,527	46,451	47,904	49,438	50,731	53,817
Commonwealth	964,553	1,022,841	1,053,372	1,090,131	1,142,939	1,185,608	1,258,689

The subjoined table shews the above figures in relation to the population of the States; it must, of course, be borne in mind that savings bank accounts are not restricted to the adult population, but that it is, on the contrary, a very usual practice to open accounts in the name of children. Even so, the proportion is a large one, amounting to three-tenths of the total population of the Commonwealth, and rising in Victoria to almost two-fifths, and in South Australia to more than two-fifths:—

DEPOSITORS IN SAVINGS BANKS PER THOUSAND OF POPULATION, 1900-1 TO 1906-7.

State.	1900-1.	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.
New South Wales ...	208	223	230	233	244	244	257
Victoria	326	339	346	359	369	382	397
Queensland... ...	161	166	156	156	160	165	171
South Australia ...	349	363	376	383	391	401	418
Western Australia ...	208	218	216	231	238	244	253
Tasmania	246	255	262	267	274	280	304
Commonwealth ...	255	266	271	277	286	291	304

3. **Deposits.**—The total amount of deposits in the savings banks of the six States reaches the large sum of forty-two million pounds, and would no doubt be even larger if the banks did not restrict interest-bearing deposits to certain limits, generally £200. It must be remembered that though not granting him facilities to draw cheques, the Australian savings banks practically afford the small tradesman all the advantages of a current account, in addition to which they also allow him interest on his minimum monthly balance, instead of charging him a small fee for keeping his account, as the banks of issue do. Moreover, the rule as to the limit of interest-bearing deposits is usually relaxed in the case of friendly societies and similar institutions. The savings banks of four of the States—New South Wales (Government Savings Bank), Victoria, South Australia, and Western Australia—have, for the further benefit of depositors, entered into a reciprocity arrangement, under which money deposited in one State may be drawn out in another State, and even by telegraph.

The table below shews the total amounts at credit of depositors in each of the last seven years:—

DEPOSITS IN SAVINGS BANKS, 1900-1 TO 1906-7.

State.	1900-1.	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.
	£	£	£	£	£	£	£
New South Wales ...	10,901,382	11,808,710	12,425,464	12,344,623	12,982,648	13,963,635	15,320,532
Victoria	9,662,006	10,131,604	10,341,857	10,582,808	10,896,741	11,764,179	12,792,590
Queensland	3,896,170	4,118,337	3,772,636	3,741,967	3,875,197	4,142,791	4,543,104
South Australia ...	3,795,631	3,988,649	4,187,590	4,217,836	4,398,041	4,763,907	5,320,872
W. Australia	1,618,359	1,889,082	1,988,624	2,079,763	2,207,296	2,316,161	2,633,135
Tasmania	1,009,097	1,092,047	1,194,157	1,249,760	1,263,542	1,332,546	1,488,056
Commonwealth ...	30,882,645	33,028,420	33,910,378	34,216,757	35,623,465	38,283,219	42,098,289

A comparison between the tables shewing the number of depositors and the amount of deposits reveals the fact that the average amounts to the credit of each depositor are considerably larger in one State than in another; in other words, that in one State a comparatively larger proportion of the population make use of the savings banks, and that the natural result is a smaller amount to the credit of the individual depositor. Within the same State there is little variation in the figures from year to year:—

AVERAGE AMOUNTS PER DEPOSITOR IN AUSTRALIAN SAVINGS BANKS, 1900-1 TO 1906-7.

State.	1900-1.			1901-2.			1902-3.			1903-4.			1904-5.			1905-6.			1906-7.		
	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
New South Wales	38	11	5	38	11	0	38	8	10	37	3	9	36	9	9	38	7	2	39	1	7
Victoria	24	11	8	24	14	1	24	14	3	24	9	0	24	7	2	25	4	1	26	0	9
Queensland	48	1	9	48	12	7	47	2	8	46	4	5	46	0	10	47	1	3	48	17	11
South Australia	30	2	4	30	8	11	30	10	8	29	15	10	30	1	0	31	5	3	32	17	6
Western Australia	41	3	3	41	17	7	41	8	5	37	18	0	36	18	8	36	8	8	39	0	1
Tasmania	23	14	9	24	10	6	25	14	2	26	1	0	25	11	2	26	5	4	27	13	0
Commonwealth ...	32	0	4	32	5	10	32	3	10	31	7	9	31	3	4	32	5	10	33	8	11

The average amount deposited per head of population shews a satisfactory increase during the period under review. In 1900-1 it ranged from £10 10s. in South Australia to £5 16s. 9d. in Tasmania, while in 1906-7 the amount in South Australia had risen to £13 15s., and in Tasmania to £8 8s. 4d. Tasmania's average is now higher than that of Queensland, which, nevertheless, rose from £7 15s. 2d. to £8 7s. 6d. during the seven years. The following table gives the figures for each year:—

SAVINGS BANKS DEPOSITS PER HEAD OF POPULATION, 1900-1 TO 1906-7.

State.	1900-1.			1901-2.			1902-3.			1903-4.			1904-5.			1905-6.			1906-7.		
	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
N.S. Wales ...	8	0	3	8	11	9	8	17	1	8	13	0	8	18	2	9	7	3	10	0	8
Victoria ...	8	0	6	8	7	5	8	11	3	8	15	6	9	0	0	9	12	5	10	6	10
Queensland ...	7	15	2	8	1	4	7	7	2	7	3	11	7	7	3	7	15	2	8	7	6
South Aust. ...	10	10	0	10	19	4	11	9	5	11	8	6	11	15	0	12	11	0	13	15	0
West. Australia	8	11	3	9	2	6	8	19	2	8	14	9	8	15	9	8	17	8	9	19	3
Tasmania ...	5	16	9	6	5	3	6	14	7	6	19	3	7	0	3	7	7	2	8	8	4
C'wealth ...	8	3	0	8	12	0	8	14	5	8	13	8	8	18	1	9	8	1	10	3	8

4. **Annual Business.**—The annual volume of business transacted by the Australian savings banks is very large when compared with the total amount of deposits. This is

mainly due to the fact already pointed out of many accounts being used as convenient current accounts. Thus, during the last year of the period under review, the total amount deposited and withdrawn (exclusive of interest added) amounted to more than 119 per cent. of the total amount of deposits at the end of the previous year, while the amount at credit of depositors (inclusive of interest added) increased by less than 10 per cent. during the same year. In the following table, which shows the business transacted during the year 1906-7, the Tasmanian figures do not agree with those previously shewn, owing to the overlapping explained at the beginning of section 4:—

TRANSACTIONS DURING THE YEAR, 1906-7.

State.	Total Deposits at End of Year 1905-6.	Amounts Deposited during Year 1906-7.	Interest Added during Year 1906-7.	Total.	Amounts Withdrawn during Year 1906-7.	Total Deposits at End of Year 1906-7.
	£	£	£	£	£	£
N.S. Wales ...	13,963,635	7,770,136	446,432	22,180,203	6,859,671	15,320,532
Victoria ...	11,764,179	8.553,711	310,935	20,628,825	7,836,235	12,792,590
Queensland ...	4,142,791	2,144,060	113,984	6,400,835	1,857,731	4,543,104
South Australia	4,766,907	2,872,517	147,157	7,786,581	2,465,709	5,320,872
West. Australia	2,316,161	1,962,554	67,627	4,346,342	1,713,207	2,633,135
Tasmania ...	1,332,546	827,137	45,706	2,205,389	742,251	*1,463,138
Commonwealth	38,286,219	24,130,115	1,131,841	63,548,175	21,474,804	*42,073,371

* Figures for 30th June, 1907, are £1.488,056 and £42,098,239 respectively, as shewn in a previous table.

§ 5. Life Assurance.

1. **General.**—Under section 51 of the Commonwealth Constitution Act, the Commonwealth Parliament is empowered to legislate in regard to "insurance, other than State insurance; also State insurance extending beyond the limits of the State concerned." With the exception of Act No. 12 of 1905, "an Act relating to assurance on the lives of children by life assurance companies or societies," no legislation relating to insurance has been passed by the Commonwealth Parliament, and life assurance companies carry on their business under State laws where such laws are in existence, or otherwise under the provisions of various companies or special Acts. Thus, *e.g.*, in New South Wales no law exists compelling life assurance societies to make returns of their business within the State, and New South Wales statistics refer, therefore, to the whole business of the societies established there.

Pending Commonwealth legislation no attempt has been made to directly collect any returns from life assurance societies, and the figures given in this paragraph are, therefore, taken from returns obtained by the various State offices.

2. **Companies Transacting Business in the Commonwealth.**—The total number of companies at present established in the Commonwealth is twenty, of which the following eight have their head offices in New South Wales:—The Australian Mutual Provident Society, the Mutual Life Association of Australasia, the City Mutual Life Assurance Society Limited, the Citizens' Life Assurance Company Limited, the Standard Life Association Limited, the Australian Metropolitan Life Assurance Company Limited, the People's Prudential Assurance Company Limited, and the Phœnix Mutual Provident Society Limited. Six companies have their head offices in Victoria, viz.—The Australian Alliance Assurance Company, the National Mutual Life Association of Australasia Limited, the Australian Widows' Fund Life Assurance Society Limited, the

Victoria Insurance Company Limited, the Colonial Mutual Life Assurance Society Limited, and the Australasian Temperance and General Mutual Life Assurance Society Limited. The head office of the Provident Life Assurance Company is in New Zealand, and that of the Liverpool and London and Globe Insurance Company in England. The Independent Order of Foresters is a Canadian institution, while the remaining three societies belong to the United States, viz.—The Equitable Life Insurance Society of the United States, the Mutual Life Insurance Company of New York, and the New York Life Insurance Company.

Most of the Australian companies are purely mutual; the Victoria (which takes no new life business), the Australian Alliance (which transacts mainly business other than life), and the Citizens' are the only companies which are partly proprietary, the shareholders' capital amounting to £40,000, £125.000, and £20,000 respectively.

3. **Ordinary and Industrial Business.**—Of the societies enumerated in the preceding paragraph the following six transact both ordinary and industrial business:—The Australian Mutual Provident Society, the Citizens' Life Assurance Company Limited, the Australian Temperance and General Mutual Life Assurance Society Limited, the Standard Life Association Limited, the Provident Life Assurance Company, and the Australian Metropolitan Life Assurance Company Limited.

The People's Prudential Assurance Company Limited and the Phœnix Mutual Provident Society Limited restrict their operations to industrial business, the former in addition having a medical benefit branch.

The remaining twelve societies transact ordinary life assurance business only.

It has been attempted in this section to keep returns relating to ordinary and to industrial business apart, so far as it is possible to do so, and figures relating to companies whose head offices are in Europe or America refer to the Australasian business of those companies only.

4. **Ordinary Business: Australasian Business in Force, 1906.**—The subjoined table shews the ordinary life business in force at the latest dates available in the eighteen societies conducting operations in the Commonwealth and in New Zealand:—

ORDINARY LIFE ASSURANCE.—AUSTRALASIAN BUSINESS IN FORCE, 1906.

Society.	Policies in force, exclusive of Annuities.	Amount Assured, exclusive of Bonus Addition, etc.	Bonus Additions.	Total.	Annual Premium Income.
	No.	£	£	£	£
Australian Mutual Provident Society	203,809	56,721,512	11,436,823	68,158,335	1,961,050
Mutual Life Association of Australasia ...	24,480	5,953,312	332,436	6,285,748	210,066
City Mutual Life Assurance Society	12,825	1,621,332	61,641	1,682,973	55,251
Citizens' Life Assurance Company	48,298	6,016,333	284,495	6,300,828	229,153
Standard Life Association	3,847	476,842	2,130	478,972	20,895
Australian Metropolitan Life Assurance Co. ...	1,548	130,404	1,139	131,543	6,173
People's Prudential Assurance Company ...	1,584	75,784	*	75,784	4,128
Australian Alliance Assurance Company ...	823	290,108	26,948	317,056	8,526
National Mutual Life Association of Australasia	61,189	13,641,124	893,813	14,534,937	411,311
Australian Widows' Fund Life Assurance Socy.	25,302	5,352,368	431,397	5,783,765	193,633
Victoria Insurance Company	†	†	†	†	†
Colonial Mutual Life Assurance Society ...	21,346	4,747,151	290,898	5,038,049	158,604
Aust. Temperance & General Mut. Life Ass. Socy.	18,341	2,158,767	47,342	2,206,109	80,115
Liverpool and London and Globe Insurance Co.	904	373,558	†	†	9,981
Independent Order of Foresters	1,448	246,700	...	246,700	4,677
Equitable Life Assurance Socy. of United States	12,584	4,660,017	†	†	187,000
Mutual Life Insurance Company of New York ...	5,305	2,169,155	†	†	83,403
New York Life Insurance Company	8,261	3,175,444	†	†	124,749

* Included in previous column. † Returns not available.

5. **Industrial Business: Australasian Business in Force, 1906.**—Similar information in regard to the industrial business of the eight societies devoting themselves to that business is given in the following table:—

INDUSTRIAL LIFE ASSURANCE.—AUSTRALASIAN BUSINESS IN FORCE, 1906.

Society.	Policies in Force.	Amount Assured.	Annual Premium Income.
	No.	£	£
Australian Mutual Provident Society	16,318	432,623	25,981
Citizens' Life Assurance Company	196,859	3,936,562	181,208
Standard Life Association	19,379	537,309	25,356
Australian Metropolitan Life Assurance Company ...	11,966	404,963	18,153
People's Prudential Assurance Company	4,682	103,211	13,731
Phœnix Mutual Provident Society	442	18,516	3,473
Aust. Temperance and General Mutual Life Ass. Society	94,563	1,812,702	118,678
Provident Life Assurance Company	2,074	55,695	2,871

6. **Receipts and Expenditure of Australasian Societies, 1906.**—(i.) *Ordinary Business.* The following returns refer only to those companies whose head offices are in the Commonwealth and in New Zealand. In the case of the Australian Metropolitan Life Assurance Company and the People's Prudential Assurance Company, whose accounts do not distinguish between revenue and expenditure on account of ordinary and industrial business, a division has been made in accordance with the experience of other companies:—

ORDINARY LIFE ASSURANCE.—RECEIPTS AND EXPENDITURE, 1906.

Society.	Receipts.	Expenditure.	Excess Receipts (Addition to Funds).
	£	£	£
Australian Mutual Provident Society	2,932,755	1,942,009	990,746
Mutual Life Association of Australasia	333,672	226,064	107,608
City Mutual Life Assurance Society	77,473	53,226	24,247
Citizens' Life Assurance Company	278,714	97,529	181,185
Standard Life Association	18,745	14,371	4,374
Australian Metropolitan Life Assurance Company ...	*5,000	*3,500	*1,500
People's Prudential Assurance Company	*4,000	*2,500	*1,500
Australian Alliance Assurance Company	58,023	38,239	19,784
National Mutual Life Association of Australasia ...	823,789	541,569	282,220
Australian Widows' Fund Life Assurance Society ...	262,620	219,806	42,814
Victoria Insurance Company	12,270	14,733	†— 2,463
Colonial Mutual Life Assurance Society	466,326	474,841	†— 8,515
Aust. Temperance & General Mutual Life Ass. Socy.	98,667	59,951	38,716
Total	5,372,054	3,688,338	1,683,716

* Approximate. † Decrease.

(ii.) *Industrial Business.* A similar return for those societies which transact industrial business is given below. The figures given for the Metropolitan and the Prudential, added to those given above, make up the correct totals for both kinds of business returned by these societies, viz.:—Metropolitan—Receipts, £21,048; expenditure, £18,567; surplus, £2481; and Prudential—Receipts, £15,919; expenditure, £13,693; surplus, £2226:—

INDUSTRIAL LIFE ASSURANCE.—RECEIPTS AND EXPENDITURE.

1906.

Society.	Receipts.	Expenditure.	Excess Receipts (Addition to Funds)
	£	£	£
Australian Mutual Provident Society	25,351	24,281	1,070
Citizens' Life Assurance Company	205,910	122,857	83,053
Standard Life Association	24,365	21,217	3,148
Australian Metropolitan Life Assurance Company	*16,048	*15,067	*981
People's Prudential Assurance Company... ...	*11,919	*11,193	*726
Phœnix Mutual Provident Society	†	†	†
Aust. Temperance & General Mutual Life Ass. Soc.	118,434	75,278	43,156
Provident Life Assurance Company	18,350	14,492	3,858
Total	420,377	284,385	135,992

* Approximate. † Returns not available.

7. **Expenses of Management of Australasian Societies, 1906.**—(i.) *Ordinary Business.* In the following table the expenses of management of the several Australasian societies transacting ordinary life business are shewn, together with the proportion these expenses bear to premium income and to gross receipts. The Australian Metropolitan and the People's Prudential companies are included amongst the industrial companies in a subsequent table, as these two companies transact mainly industrial business, and as their returns include both ordinary and industrial business:—

ORDINARY LIFE ASSURANCE.—EXPENSES OF MANAGEMENT.

1906.

Society.	Expenses of Management.	Proportion to Premium Receipts.	Proportion to Gross Receipts.
	£	%	%
Australian Mutual Provident Society...	259,769	13.81	8.85
Mutual Life Association of Australasia	60,069	25.21	18.05
City Mutual Life Assurance Society	18,667	31.33	24.09
Citizens' Life Assurance Company	34,866	15.41	12.51
Standard Life Association	12,885	71.63	68.74
Australian Alliance Assurance Company	2,440	32.62	4.20
National Mutual Life Association of Australasia ...	144,452	24.88	17.53
Australian Widows' Fund Life Assurance Society ...	25,637	13.92	3.76
Victoria Insurance Company	1,540	...	12.55
Colonial Mutual Life Assurance Society	102,387	29.41	21.96
Australasian Temperance and General Mut. Life Ass. Soc.	20,776	25.65	21.06

(ii.) *Industrial Business.* The Australasian assurance societies have, in common with assurance societies elsewhere, made the experience that industrial business is much more expensive than ordinary business. This is, of course, principally due to the great expenses in connection with collection and commission. The subjoined table shews particulars so far as they are available:—

INDUSTRIAL LIFE ASSURANCE.—EXPENSES OF MANAGEMENT. 1906.

Society.	Expenses of Management.	Proportion to Premium Receipts.	Proportion to Gross Receipts.
	£	%	%
Australian Mutual Provident Society	23,571	126.93	92.97
Citizens' Life Assurance Company	69,441	38.55	33.72
Standard Life Association	14,192	60.37	58.24
Australian Metropolitan Life Assurance Company* ...	12,342	61.57	58.63
People's Prudential Assurance Company*	7,163	46.67	44.99
Phœnix Mutual Provident Society	†	†	†
Aust. Temperance & General Mutual Life Ass. Socy.	58,584	51.92	49.47
Provident Life Assurance Company	10,272	58.93	55.98

* Including ordinary business † Returns not available.

8. **Liabilities and Assets of Australasian Societies, 1906.**—The liabilities of the Australasian societies consist mainly of their assurance funds; as already mentioned, only three of the societies are partly proprietary, viz., the Citizens', with a paid-up capital of £20,000; the Australian Alliance, with a paid-up capital of £125,000; and the Victoria, with a paid-up capital of £40,000. In the following table these amounts are included with the assurance funds. The assets consist mainly in loans on mortgage and policies, in Government, municipal, and similar securities, shares, freehold property, etc.:—

(i.) *Ordinary Business.* The following table shows the liabilities and assets of the Australasian societies transacting ordinary life business:—

ORDINARY LIFE ASSURANCE.—LIABILITIES AND ASSETS, 1906.

Society.	Liabilities.			Assets.		
	Total Funds including Paid-up Capital.	Other Liabilities.	Total.	Loans on Mortgages and Policies.	Securities, Freehold Property, etc.	Total.
	£	£	£	£	£	£
Australian Mutual Provident Society[1] ...	22,748,403	34,910	22,783,313	16,181,236	6,602,077	22,783,313
Mutual Life Association of Australasia ...	2,088,218	119	2,088,337	1,213,155	875,182	2,088,337
City Mutual Life Assurance Society ...	324,296	95	324,391	203,350	121,041	324,391
Citizens' Life Assurance Company ...	1,247,764	13	1,247,777	414,761	833,016	1,247,777
Standard Life Association...	21,035	1,067	22,102	765	21,337	22,102
Australasian Alliance Assurance Company[2]	416,551	906	417,457	262,459	154,998	417,457
National Mut. Life Assoc. of Australasia ...	4,626,135	20,204	4,646,339	3,011,648	1,634,691	4,646,339
Aust. Widows' Fund Life Assur. Society ...	1,774,644	11,425	1,786,069	1,283,399	502,670	1,786,069
Victoria Insurance Company... ...	223,807	46,271	270,078	120,739	149,339	270,078
Colonial Mutual Life Assurance Society ...	2,993,059	307	2,993,366	1,593,836	1,399,530	2,993,366
Aust. Temp. & Gen. Mut. Life Assur. Soc[1]	566,035	941	566,976	207,669	359,307	566,976
Total	37,029,947	116,258	37,146,205	24,493,017	12,653,188	37,146,205

[1] Including industrial business. As the business of these two societies is mainly ordinary life business they have been included in this table. [2] Including fire, marine, and guarantee branches, which cannot be separated.

(ii.) *Industrial Business.* As stated in the footnote to the preceding table, the Australian Mutual Provident Society and the Australasian Temperance and General Mutual Life Assurance Society, which transact a certain amount of industrial business, but whose business is mainly ordinary life business, have been included with those societies doing only ordinary life business. On the other hand, the Australian Metropolitan Life Assurance Company, and the People's Prudential Assurance Company, in whose case industrial business greatly predominates over ordinary life business, have been included in the following table:—

INDUSTRIAL LIFE ASSURANCE.—LIABILITIES AND ASSETS, 1906.

Society.	Liabilities.			Assets.		
	Total Funds, including Paid-up Capital.	Other Liabilities.	Total.	Loans on Mortgages and Policies.	Securities, Freehold Property, etc.	Total
	£	£	£	£	£	£
Citizens' Life Assurance Company	563,048	6,686	569,734	228,817	340,917	569,734
Standard Life Association	29,676	382	30,058	1,540	28,518	30,058
Australian Metropolitan Life Assurance Co*	31,461	10,698	42,159	869	41,290	42,159
People's Prudential Assurance Company*...	17,015	215	17,230	6,049	11,181	17,230
Phœnix Mutual Provident Society	†	†	†	†	†	†
Provident Life Assurance Company ...	37,926	277	38,203	9,098	29,105	38,203
Total	679,126	18,258	697,384	246,373	451,011	697,384

* Including ordinary business. † Returns not available.

§ 6. Other Insurance.

1. **General.**—Returns as to fire insurance are very defective, and only for Sydney and Melbourne and the country districts of Victoria have some figures been given which are worth reproducing.

2. **Sydney.**—Under the Fire Brigades Act 1902 the cost of the Metropolitan Fire Brigade is defrayed by equal payments on the part of the Colonial Treasurer, the municipal councils within the area under the jurisdiction of the Fire Brigades Board, and the insurance companies represented in Sydney. The companies divide their share proportionately to the amount held at risk. Under this arrangement the amount payable by the companies for the year 1907 was £15,700, divided amongst fifty-nine companies, of which not more than five had their head office in Sydney. The amounts thus held at risk at the close of the last three years for which returns are available were, in 1904, £75,147,807; in 1905, £78,108,749; and in 1906, £81,364,129. As the total capital value of all ratable property in Sydney and suburbs is about £101,000,000, and the unimproved value £40,000,000, the value of buildings and other improvements on ratable property amounts to £61,000,000, and it appears, therefore, that in addition to the value of buildings, represented by this £61,000,000, furniture, stocks in warehouses, machinery, etc., must be insured for about £20,000,000.

3. **Melbourne.**—In Melbourne the Metropolitan Fire Brigades Board assesses the amount payable by the insurance companies on the amount of premiums returned. These premiums for the last three years were, in 1904, £284,688; in 1905, £296,138; and in 1906, £304,123. The contributions paid by the companies in 1904 and 1905 were £12,679 and £13,268 respectively, or £4 9s. 1d. and £4 9s. 8d. for every £100 of premiums received.

The annual value of ratable property during the last three years was £4,634,618, £4,701,008, and £4,784,392 respectively, and the amounts contributed by the municipalities—as in the case of the insurance companies, one-third of the amount required by the Fire Brigades Board, the remaining one-third being contributed by the State Treasurer—were equal to 0.65d., 0.65d., and 0.67d. per £1 of ratable value. In addition to this contribution insurance companies doing business in Victoria have to take out an annual license at a cost of 1½ per cent. of their gross premium income, which is probably equal to about 1⅜ per cent. on net income.

4. **Country Districts of Victoria.**—The country districts are divided into nine areas for fire insurance purposes, and the contributions to be paid vary in these areas according to the actual requirements of the Country Fire Brigades Board. The annual values of ratable property were returned as follows:—In 1904, £1,361,038; in 1905, £1,393,770; and in 1906, £1,400,568. The premium income of the insurance companies from country business during the same three years was £143,396, £145,056, and £150,079 respectively. For the year 1906 the companies were required to contribute £3690 on the above amount of £150,079. equal to about £2 9s. 2d. per £100 of premium income.

5. **Brisbane.**—A similar arrangement holds good in Brisbane, under which the cost of the Fire Brigade Board, amounting in 1906 to a total of £5786, is paid in equal shares by the Government, the Brisbane City Council, and the insurance companies.

6. **Australian Insurance Business.**—Returns are available shewing the revenue and expenditure, assets and liabilities, and investments, of sixteen Insurance companies, having their head offices either in the Commonwealth or in New Zealand. These companies are:—(*a*) with head-office in Sydney—the Australian Mutual Fire Insurance Company, the City Mutual Fire Insurance Company, the Mercantile Mutual Fire Insurance Company, the North Queensland Insurance Company Limited, and the United Insurance Company; (*b*) with head-office in Melbourne—the Australian Alliance Assurance Company, the Colonial Mutual Fire Insurance Company, the Commonwealth Insurance Company Limited, the Victoria Insurance Company, and the Victoria General Insurance and Guarantee Company Limited; (*c*) with head-office in Hobart—the Derwent and Tamar Fire and Marine Assurance Company Limited; (*d*) with head-office in Launceston—the Mutual Fire Insurance Company of Tasmania; (*e*) with head-office in Auckland—the New Zealand Insurance Company, and the South British Fire and Marine Insurance Company of New Zealand; and (*f*) with head-office in Dunedin—the National Fire and Marine Insurance Company of New Zealand, and the Standard Fire and Marine Insurance Company of New Zealand. As their names imply, the majority of these companies transact marine insurance and in some cases guarantee and other business in addition to fire insurance business, and the returns relating to the latter cannot be separated from the former.

The accounts cover two periods of one year, the second year ending at various dates from 30th August, 1906, to 30th June, 1907. The figures for the first year are put in brackets.

The premiums, less re-insurances and returns, amounted to £1,656,173 (£1,461,671); losses were £1,158,819 (£811,954). Particularly in the case of one of the New Zealand companies some heavy losses were experienced in connection with the earthquake and fire in San Francisco. Expenses and commission came to £499,411 (£470,488), and there was, therefore, a loss on trade operations of £2157 (profit, £179,229). As, however, interest, rent, fees, etc., amounted to £132,589 (£124,526), the total profit was £130,432 (£303,755). Dividends and bonuses came to £168,782 (£158,582). The ratio to premium income of losses was, therefore, 69.97 per cent. (55.55 per cent.), ranging from 23.26 per cent. to 111.91 per cent.; and of expenses and commissions, 30.16 per cent. (32.19 per cent.). The resulting loss ratio was 0.13 per cent. (ratio of trade surplus to premium income, 12.26 per cent.).

The paid-up capital of the sixteen companies was £1,261,597 (£1,160,262); reserve and reinsurance funds, £1,733,605 (£1,716,960); undivided profits, £170,581 (£194,410). The total paid-up capital and reserves were, therefore, £3,165,783 (£3,071,632). In addition to these liabilities there were others, viz.:—Unsettled losses, £243,763 (£181,914); sundry creditors, £134,582 (£112,383); dividend to pay, £119,283 (£108,050); and, in the case of one company, a life assurance fund, £242,013 (£209,814), thus bringing the total liabilities to shareholders and to the general public up to £3,905,424 (£3,683,796).

The corresponding amount of assets is made up of investments, £3,389,058 (£3,225,148), viz.:—Loans on mortgage, £814,198 (£799,144); Government securities, debentures, shares, etc., £954,985 (£795,462); landed and other property, including furniture, £669,556 (£673,470); fixed deposits, £582,589 (£584,897); in the case of one company doing a mixed business—loans on its own life policies, etc., £21,945 (£22,810); other investments, £345,785 (£349,365). The balance of assets consisted of cash in bank, on hand, and bills receivable, £173,339 (£181,363); and sundry debtors, etc., £343,027 (£277,285).

The financial position of the companies is undoubtedly a strong one, owing to the steady accumulation of reserves, and the high ratio (191 per cent.) borne by capital and reserves to premium income must be a cause of satisfaction to policyholders. If it were not for the losses in connection with the San Francisco disaster, stated at £285,695, experienced by one company, the aggregate results for the year would compare very favourably with those for previous years, the net premium income having increased by £194,502 during the year, and ordinary losses by only £61,170.

§ 7. Friendly Societies.

1. **General.**—Friendly societies are an important factor in the social life of the community, as probably nearly one-third of the total population of the Commonwealth comes either directly or indirectly under their influence. Their total membership is about 340,000, but as certain benefits, such as medical attendance and free medicine, and in many cases funeral expenses, are granted to members' families as well as to members themselves, this figure must, even when due allowance is made for young and unmarried members, be multiplied by four at the least to arrive at the total number of persons more or less connected with these societies. Legislation has conferred certain privileges on friendly societies, but, on the other hand, it insists on their registration, and it is the duty of the Registrars in the various States, prior to registering a new society, to see that its rules are conformable to the law, and that the scale of contributions is sufficiently high to enable the promised benefits to be conferred on members. Societies are obliged to forward annual returns as to their membership and their finances to the Registrar, and elaborate reports are published in most of the States dealing with the returns thus received.

In the following tables the figures for New South Wales, Victoria, Queensland, and Western Australia refer to the year 1906, and those for Tasmania to the year 1905. In South Australia a quinquennial report is published, the last one embracing the years 1900 to 1904. From this report averages have been taken, which may be assumed to approximately refer to the year 1904.

2. **Number of Societies, Lodges, and Members.**—The total number of societies registered in New South Wales is 45; in Victoria, 26; in Queensland, 21; in South Australia, 17; in Western Australia, 16; and in Tasmania, 16. No total is given of these figures for the Commonwealth, as the societies shewn in one State are in most cases represented in all the other States. The number of different lodges, the total number of benefit members at the end of the year, and their average number during the year are shewn in the following table:—

NUMBER OF LODGES AND MEMBERS, 31ST DECEMBER, 1906.[*]

State.	Number of Lodges.	Members at End of Year.	Average No. of Members during Year.
New South Wales	1,299	106,220	103,841
Victoria	1,351	116,562	114,059
Queensland	416	33,717	32,950
South Australia	493	49,241	45,327
Western Australia	237	14,630	14,278
Tasmania	152	17,085	15,507
Commonwealth	3,948	337,405	326,025

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[*] See, however, paragraph 1.

The number of honorary members is stated as 753 in Western Australia, and as 494 in Tasmania, and the latter State returns the number of registered wives as 7969; in the remaining States these particulars were not registered.

3. **Sickness and Death.**—Sick pay is generally granted for a number of months at full rates, then for a period at half rates, and in some societies is finally reduced to quarter rates. The following table shews the total number of members who received sick pay during the year, the number of weeks for which they received pay in the aggregate, and the average per member sick, and further the number of benefit members who died during the year, together with the proportion of deaths per thousand average members:—

SICKNESS AND DEATH, 1906.*

State.	Number of Members who received Sick Pay.	Total Number of weeks Sick Pay granted.	Average Number of weeks per Member sick.	Deaths of Benefit Members.	Proportion of Deaths to 1000 average Benefit Members.
New South Wales	18,660	105,437	5.65	735	7.08
Victoria	22,394	185,537	8.29	1,052	9.22
Queensland ...	6,202	32,552	5.25	219	6.65
South Australia ...	8,612	78,379	9.10	488	10.77
Western Australia	1,756	8,982	5.08	88	6.16
Tasmania ...	3,176	17,600	5.54	120	7.71
Commonwealth	60,800	428,487	7.05	2,702	8.29

* See, however, paragraph 1.

Deaths of registered wives are returned for Victoria as 424; for Queensland as 103; and for Western Australia as 31.

4. **Revenue and Expenditure.**—The financial returns are not made up in the same way in each State, but an attempt has been made in the subjoined table to group the revenue under the main headings:—

REVENUE, 1906.*

State.	Entrance Fees.†	Members' Contributions.	Levies.	Interest, Dividends, and Rents.	All other Income.	Total Revenue.
	£	£	£	£	£	£
New South Wales	1,958	298,375	—	38,385	72,092	410,810
Victoria ...	4,136	335,719	—	64,752	31,554	436,161
Queensland ...	‡	110,080	‡	§	13,534	123,564
South Australia ...	‖	‖	‖	‖	‖	‖
Western Australia	1,745	34,938	346	5,322	27,774	70,125
Tasmania ...	‡	52,035	‡	4,993	7,591	64,619
Commonwealth¶	‡	839,282	‡	§	265,997	1,105,279

* See, however, paragraph 1. † Including fees for registration of wives. ‡ Included under "Members' contributions." § Included under "All other income." ‖ Returns not available. ¶ Exclusive of South Australia.

The returns relating to expenditure are more complete than those relating to revenue, and can be shewn in full for every State with the exception of South Australia:—

EXPENDITURE, 1906.*

State.	Sick Pay.	Medical Attendance and Medicine.	Sums Paid at Death of Members & Members' Wives.	Administration.	All other Expenditure.	Total Expenditure.
	£	£	£	£	£	£
New South Wales	84,189	90,698	23,871	42,528	70,442	311,728
Victoria ...	124,360	120,654	25,938	60,056	23,362	354,370
Queensland ...	24,729	38,774	8,520	17,606	—	89,629
South Australia ...	43,444	24,688	20,947	†	†	†
Western Australia	7,715	12,548	1,807	10,044	27,028	59,142
Tasmania ...	14,491	14,727	5,943	7,017	12,876	55,054
Commonwealth	298,928	302,089	87,026	137,251‡	133,708‡	869,923‡

* See, however, paragraph 1. † Returns not available. ‡ Exclusive of South Australia.

It appears from the above figures that sick pay averaged nearly fourteen shillings per week, but, as the returns include pay at half and quarter rates, and as the proportion of these to full rates is not stated, the average given must be taken for what it is worth. Medical attendance and medicine came to eighteen shillings and sixpence per average benefit member, or to nearly £5 per member who received sick pay during the year. Funeral expenses averaged £26 14s. per member and members' wives who died during the year, but this average also must be taken for what it is worth, as the funeral expenses allowed in the case of the death of a member are generally much higher than those allowed in the case of the death of a member's wife.

5. **Funds.**—The two foregoing tables shew that in five States the surplus of revenue over expenditure amounted to £235,356 for the year, and a small surplus must, of course, result annually in every society which levies adequate contributions to enable it to meet all possible claims. These accumulations of profits are generally invested, and the subjoined table shews for four out of the six States the division into invested and uninvested funds, and in the case of South Australia and Tasmania the total amount of funds:—

FUNDS, 31ST DECEMBER, 1906.*

State.	Invested Funds.	Uninvested Funds.	Total Funds.
	£	£	£
New South Wales	1,008,684	61,291	1,069,975
Victoria	1,633,838	74,508	1,708,346
Queensland	369,807	22,516	392,323
South Australia	†	†	676,040
Western Australia	92,845	10,475	103,320
Tasmania...	†	†	143,577
Commonwealth	‡3,105,174	‡168,790	4,093,581

* See, however, paragraph 1. † Returns not available. ‡ Exclusive of South Australia and Tasmania.

The total funds amounted, therefore, to £12 2s. 8d. per member at the close of the year under review.

SECTION XXII.

PUBLIC INSTRUCTION.

§ 1. Early History of Primary Education in Australia.

1. **Primary System of New South Wales.**—(i.) *Place of New South Wales in Australian Education.* The first settlement in Australia being in New South Wales, it is but natural that Australian education should have its beginnings in that State. In the evolution of educational method and system in Australia, New South Wales also has played a leading part and had practically a dominating influence. For that reason a sketch of the evolution of education in New South Wales contains, as it were, the key to the understanding at the Australian attitude to this question.

(ii.) *Early Difficulties.*[1] Although the instructions issued to Governor Phillip, under whose supervision the first settlement in Australia was founded, contained the direction that 200 acres near every township should be reserved for the maintenance of a schoolmaster, and there were many children in the "First Fleet," no teacher was sent with that fleet, and it was not until 1792, four years after the foundation of the colony, that any interest in the well-being of the children was manifested. The first chaplain, the Rev. R. Johnson, lamenting the neglected condition of the children, suggested that educated persons might be found to undertake the duties of teachers, if means were provided to pay them. With this object he appealed to the Society for the Promotion of the Gospel in Foreign Parts, and that body granted the sum of £40—£10 for each of the four teachers.

The first building used as a school-house was that built as a church for the Rev. R. Johnson, and was wilfully burnt down. Governor Phillip states that in this building from 150 to 200 children were educated under the immediate superintendence of the clergyman. Governor Hunter seems to have been concerned about the juveniles of his charge, for, in his despatch dated August, 1796, he wrote that "a public school for the care and education of the children is much wanted to save them from certain ruin." Though the Ministry of the day turned a deaf ear to his appeals, the Church Society in London resolved to extend assistance to the new settlement, and to begin with holding out encouragement to schoolmasters and schoolmistresses as the most likely means of effecting a reformation. Very little, however, was done; and in March, 1802, Governor King reported "the children numbered 1002, and finer or more neglected children are not to be met with in any part of the world."

(iii.) *Voluntary Effort.* The first voluntary effort to establish a school was made at the Hawkesbury, the leading farming centre of the population. The settlers not having the means to erect a school-house, the Governor had it built at the expense of the Crown, and obtained from the settlers signatures to an instrument, engaging themselves and their heirs, &c., for the term of fourteen years to pay the annual sum of 2d. per acre for all lands granted by the Crown and held by them, for the purpose of providing a maintenance for such persons as might be appointed to teach the children. This is the first instance of a "school-rate" in Australia, and was imposed before a similar rate was thought of in England.

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[1] The following sketch (paragraph ii. to viii.) is contributed by P. Board, M.A., Under-Secretary of Public Instruction, and Director of Education, New South Wales.

Governor Bligh appears to have shown great interest in the education of youth. Writing in February, 1807, he refers to the work of regulating schools in the towns and watching over the rising generation, and states: "At present we are doing all in our power to educate the children, having nearly 400 of them under tuition in the different parts of the colony."

(iv.) *State Grants.* From 1810 schools were generally established by the various churches by means of grants from the State. This aid was derived from certain Customs duties called the "Orphan Dues," because the first charge upon them was for the maintenance and education of orphan children. The money was applied chiefly to the payment of teachers' salaries. Each school was wholly independent of others; there was no system or general aim prescribed by a competent authority. Religious instruction, including the Church Catechism, was universally given without regard to the denomination of the pupils; in point of fact, the schools were almost entirely Church of England institutions.

(v.) *Denominational Education.* In 1831 Sir Richard Bourke became Governor, and in his first address to the Legislative Council he recommended a liberal provision for the religious instruction and education of the people, and in 1836 he advised that the "Irish National System of Education" be introduced into the colony. Though the proposal was approved by the Home Government, and was warmly supported by Sir George Gipps, who succeeded Bourke, it was opposed so strongly that for several years nothing was accomplished except that the National System was brought under the notice of the colonists and its principles made familiar to them.

(*a*) *Advantage of a General System over a Denominational one.* In June, 1844, Mr. Robert Lowe, afterwards Lord Sherbrooke, carried a resolution in the Legislative Council appointing a Select Committee to inquire into and report upon the state of education in the colony, and to devise means of placing the education of youth upon a basis suited to the wants and wishes of the community. In August following, the Committee reported that the state of education was extremely deficient. There were 25,676 children between the ages of 4 and 14, of whom 7642 received instruction in the State-aided Denominational Schools, and 4865 in Private Schools, leaving about 13,000 children who received no education at all. The report stated that the Committee were convinced of the superiority of a general over a denominational system, and therefore recommended that one uniform system be established for the whole of the colony, and that an adherence to that system should be made an indispensable condition under which alone aid should be granted. In support of these views, resolutions were carried in the Council, but only by a majority of one—"That it is advisable to introduce Lord Stanley's System of National Education"; "that in order to introduce this system, His Excellency the Governor be requested to appoint a Board of persons favourable to the introduction of Lord Stanley's National System of Education, and belonging to the different religious denominations: this Board to be invested with a very wide discretion as to the arrangements necessary for carrying the system into effect, and all funds to be henceforth applied for the purpose of education to be administered by them. The leading principle by which the Board of Education shall be guided is to afford the same facilities for education to all classes of professing Christians, without attempt to interfere with the peculiar religious opinions of any, or to countenance proselytism; and that the Board be incorporated."

(*b*) *Board of Denominational Education.* The supporters of the denominational system were strong enough to maintain the *status quo* till 1848, when the Board of National Education was incorporated, and to secure aid for their own schools. A Board of Denominational Education, consisting of one representative each from the Church of England, and the Roman Catholic, Presbyterian, and Wesleyan Churches was appointed to distribute the sums voted for the maintenance of Denominational Schools. The management of these schools was thus practically left to the heads of the denominations mentioned.

At this time the Denominational Schools were attended by 11,725 children, and the grant from State funds for the year 1847 was £8450. It should, of course, be borne in mind that New South Wales then included the territories known as Victoria and Queensland.

(vi.) *Inception of the National System.* The "National System" may therefore be said to have commenced in 1848, and by the end of that year four schools were under the supervision of the Board. In 1849 the number had increased to twenty-five. In 1850, the year before the colony of Victoria was formed, the returns were: National Schools, 43 in operation, and 52 in course of formation; pupils enrolled, 2725; expenditure, £7300. In this expenditure a large balance brought forward from the previous year was included. Denominational Schools, 185; pupils enrolled, 11,581; expenditure from State funds, £8350.

(a) Rivalry of Systems. For eighteen years these two educational bodies co-existed, created by the same authority and supplied with funds from the same source—the public Treasury. Each was of necessity the rival of the other, and in numerous instances competed for the same pupils. The progress of the one was secured at the expense of the other; and instead of mutual help and co-operation in the important work of education, jealousy of each other's success and division and consequent waste of means were the inevitable results. Numerous applications were made to the National Board for the establishment of schools, but as an indispensable condition was that one-third of the cost of building and equipment was to be contributed by the applicants, it can be easily understood that schools did not increase with great rapidity. In 1857 regulations for the establishment of non-vested schools, or schools not erected by or belonging to the Board, were introduced. These non-vested schools were instrumental in bringing the means of education into places where none would have otherwise existed, and met with such favour that, during the first year of their existence, sixty-six applications for aid were made. This marked increase brought the National System more widely before the public, and virtually decided the question that further legislation was necessary, and that the anomaly of dual Boards supported by State funds could no longer be continued. Several attempts to introduce a general system were made, but as the proposals tended to maintain to some extent the denominational system, they received little support either from the legislature or the public.

(vii.) *The New South Wales Public Schools Act of 1867.* It was not till 1866, when Mr. (afterwards Sir Henry) Parkes introduced the "Public Schools Act,"[1] or "an Act to make better provision for Public Education," that the long-desired change was effected. This Act came into operation in January, 1867, and introduced very important changes. By its provisions the administration of primary education was committed to a single governing body, thus ensuring a greater measure of consistency in educational policy. A Board of Education, consisting of five members, under the designation of the Council of Education, was incorporated, and entrusted with the expenditure of all moneys appropriated by Parliament for primary education. It was, moreover, empowered to make regulations having the force of law, unless disallowed by express resolution of both Houses within one month of the date of their being submitted to Parliament. These great powers enabled the Council of Education to carry on the work of instruction without restrictions from any quarter except those imposed by law.

(a) Classes of Schools.[1] The Public Schools Act recognised four classes of schools. Authority was expressly conferred upon the Council to establish and maintain Public Schools[1] in localities where twenty-five children would regularly attend; and it was also provided that such schools should, whenever practicable, take precedence of all others supported by Parliamentary grants. Secondly, the Council was permitted to grant aid to Denominational Schools under certain restrictions as to the number of pupils, the condition of the buildings, and the distance of Public Schools from those on behalf of

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[1] The term "Public School" in New South Wales denotes a State school of primary grade.

which assistance was sought; they were required to follow the course of instruction prescribed for Public Schools, and to be open to inspection in the same manner; and the Council was empowered to withdraw certificates, and therefore aid, in case these conditions were infringed. Thirdly, Provisional Schools were to be established in places where a sufficient number of children for a Public School could not be secured. Fourthly, a class of schools was instituted where the teacher divided his time between two small schools, with about ten or twelve pupils at each, called "Half-time Schools." The Public Schools Act provided that the instruction to be given in all these schools should consist of two parts, secular and religious, secular instruction, however, being held to include *general* religious teaching, as distinguished from polemical, or dogmatic, theology, and from the tenets of particular denominations. In the Denominational Schools the ordinary teachers were permitted to give the special religious teaching, while in the other schools that duty was handed over to the clergy or to other duly accredited religious teachers.

(*b*) *National Education Boards.* The local oversight of schools was provided for by the appointment of Boards of not less than three members appointed by the Governor on the recommendation of the Council of Education, but such Boards had nothing to do with the appointment or dismissal of teachers, although in the case of Denominational Schools they were consulted.

(*c*) *Work of the Council of Education.* The benefits conferred upon the colony by the Council of Education were very great. Under its auspices school buildings of modern type as regards position, shape, size, and equipment were introduced, effective discipline was enforced, and systematic and progressive instruction arranged for. That Board also instituted the appointment and training of "pupil teachers," the training, examination and classification of teachers, and a liberal scale of remuneration, together with a comprehensive system of inspection.

The Council of Education took over 259 National Schools, attended by 19,641 pupils, and 310 Denominational Schools, attended by 27,986 pupils, a total of 569 schools and 47,627 pupils.

(viii.) *The New South Wales Public Instruction Act of 1880.* The Public Schools Act continued in force until 1880; and though the system established by it was essentially one of transition, education made good progress during the thirteen years it was in force, especially after 1875, when the Legislative Assembly passed a resolution abolishing the provision that one-third of the cost of school buildings should be contributed locally, and directing that in future the entire cost of public schools should be defrayed by the public funds.

The principle of granting aid to Denominational Schools was, however, repugnant to the feelings of the majority of the people, who felt that the work of public instruction, being of such magnitude and involving so large an expenditure from the public funds, ought to become a department of the Government and be placed in the hands of a Minister directly responsible to Parliament. Accordingly, in 1880, an Act embodying these principles was introduced under the auspices of Sir Henry Parkes, and the "Public Instruction Act," now in operation, became law. The Council of Education handed over to the Minister of Public Instruction:—

Items.	Public.	Provisional.	Half-time.	Denominational.	Total.
Number of Schools... ...	705	313	97	105	1,220
Number of Pupils	68,823	8,312	1,683	22,716	101,534

(*a*) *Essential Features of the Act of 1880.* The most important provisions of the Public Instruction Act are:—(1) Primary School education is placed under the sole direction and control of a responsible Minister; (2) Teachers are made civil servants, and are paid exclusively from the public funds; (3) The system is wholly undenominational:

all aid to Denominational Schools ceased on 31st December, 1882; (4) Attendance at school is made obligatory upon children between the ages of six and fourteen years, who reside within two miles of the school, for seventy days in each half-year, unless just cause of exemption can be shewn; (5) The teaching is strictly secular, but the words "secular instruction" are held to include general religious teaching as distinguished from dogmatic and polemical theology: the History of England and Australia must form part of the course of secular instruction; (6) High schools for boys and girls may be established, in which the instruction shall be of such a character as to complete the Public School curriculum and prepare the pupils for the University; (7) Provision is made for constituting Public School districts and for the appointment of School Boards with defined powers and duties; (8) School children are allowed to travel free by rail to the nearest Public School; (9) Four hours during each day must be devoted to secular instruction, and one hour set apart for special religious instruction to be given in a separate class-room, if procurable, or in a separate part of the school-room, by a clergyman or religious teacher of any denomination to children of the same denomination whose parents have no objection to their receiving such religious instruction: if no religious teacher attends the full five hours must be devoted to the ordinary secular instruction.

(*b*) *The Question of School Fees.* Prior to the passing of the "Public Instruction Act of 1880" there were varying scales of school fees, and the fees were then retained by the teachers as part of their emoluments. The Act of 1880, however, readjusted teachers' salaries, and a fixed fee of threepence per week was charged, and the amount thus derived was paid into the Consolidated Revenue of the State. These payments amounted in late years to upwards of £80,000 per annum.

In 1906 Parliament passed an Act to abolish the payment of fees in Primary and Superior Public Schools of New South Wales, taking effect as from the 8th October of that year.

2. **Primary System of Victoria.**—This State, originally known as Port Phillip, was separated from the parent State of New South Wales in 1851. The system of dual control of educational matters, alluded to in the preceding section, was also in force in Victoria up to the year 1862, when the "Common Schools Act" dissolved the two Boards, and appointed instead a Board of Education consisting of five laymen. Up to this time, and until the passing of the Act of 1872, school fees, varying from 6s. to 2s. 6d. weekly, were charged, except in the case of those children whose parents were in necessitous circumstances. The Act of 1862 was not found to work with entire satisfaction, chiefly on account of its failure to provide anything like an equal distribution of educational facilities, and it was superseded by the Education Act of 1872, which came into operation on the 1st January, 1873. Under this Act the Board was abolished, and a Department of Education established, and placed under the control of a Minister of Public Instruction, while the principle of "free, secular, and compulsory education" was instituted. Boards of Advice were empowered to decide whether religious instruction should or should not be given out of school hours. Free instruction was given in the following subjects:—Reading, writing, arithmetic, grammar, geography, gymnastics (where practicable), and needlework for girls. Teachers were paid, in addition to fixed salaries, an amount as "Results," not exceeding 50 per cent. of their fixed salaries, and determined by the percentage of marks gained at the annual examinations. Amending Acts were passed in October, 1876, and November, 1889 while the Education Act of 1890 consolidated the whole of the legislation dealing with the subject. Under the Education Act of 1901 the system of payment by "results" was abolished. The Act also provided for a permanent head of the department with the title of "Director." Provision was made for more regular attendance of scholars by enacting that the minimum attendance of children of the school age of six to thirteen years was to be raised from forty school days per quarter to 75 per cent. of the whole number of half-days on which the school was open. Regulations were also made for the establishment of Continuation and Kindergarten Schools. The minimum age of exemption from school

attendance was fixed at twelve years. The subjects of free instruction in the primary schools were defined to be reading, writing, arithmetic, grammar, geograph , history, drill, singing, drawing, elementary science, manual training, gymnastics, and swimming (where practicable), lessons in health and temperance (in case of children over nine years of age); sewing, cooking, and domestic economy for girls.

The Education Act of 1905, also known as the "Truancy Act," provides, amongst other things, that the limit of school age shall be fourteen instead of thirteen years. The minimum attendance was fixed at eight times in any week on which the school is open ten times, six times when the school is open eight times, and four times when the school is open six times, the word "times" meaning school half-days. Some important provisions in regard to the classification and emoluments of teachers were embodied in the Teachers Act of 1905, which came into force on the 1st January, 1906.

During the period of depression which followed the financial crisis of 1893 a number of schools were temporarily closed in Victoria, while, in the case of schools in closely-populated centres, a principle of amalgamation was put in force under which certain schools became what was termed "adjuncts" to others. A main school and its adjunct were both placed under the control of one principal, but the attendance at the adjunct was restricted to children in the first, second, and third classes. The number of schools at first made into adjuncts was sixty-nine, but the total was later on reduced until in 1907 there were only twenty institutions in this class.

Improvement was made in Victorian educational methods consequent on the Report of the Royal Commission of 1899. Inclusive of those already mentioned which were made the subject of legislative action, the training of teachers was placed on a more systematic basis, by discouraging the employment of pupil teachers and providing better for the proper tuition, in suitably-equipped institutions, of recruits to the ranks of the service. Allusion to the question of training teachers will be made in a later section. Further, the Kindergarten teaching was systematised, and an expert was engaged to instruct infant teachers in approved methods, while special attention was given to the subjects of hand and eye work and natural science, in order to obtain the best practical results from the teaching.

Woodwork, cardboard modelling, and paperwork were introduced in 1900, and in 1907 there were twenty single centres for woodwork, each accommodating 200 boys, and one double centre, accommodating 400 boys. Additional teachers are also being trained, and Sloyd classes will be established in some of the smaller country towns. Attention is being given to the subjects of domestic economy and cooking. Twelve cooking centres are now open, giving instruction to 1556 girls. A College of Domestic Economy was opened in Melbourne in 1906, with an enrolment of eighty students. The Teachers' Registration Board, which is to some extent concerned with primary as well as with secondary education, will be referred to under the latter heading.

3. **Primary System of Queensland.**—From the date of its separation from New South Wales on the 10th December, 1859, up to the 30th September, 1860, primary education in Queensland was under the control of a Board of National Education, appointed by the Governor-in-Council. When the Board took office there were only two national schools in the colony. The Act of 1860 placed the control in the hands of what was termed the "Board of General Education," which consisted of five members, presided over by a Minister of the Crown. The duties of the Board were to superintend the formation and management of primary schools within the colony, and to administer the funds granted for this purpose by the Act. The scheme of operation followed in general principles the Irish National system. There were two classes of schools, vested and non-vested, the vested being unsectarian in character. The non-vested belonged to the Anglican or Roman Catholic Churches, who provided the buildings and appointed the teachers, the Board aiding by granting teachers' salaries and supplying school material. The Act of 1860 was superseded by the State Education Act of 1875, which came into operation in January, 1876, and is still in force. By the Act of 1876 the Board of Education was abolished, and its functions transferred to the Department of

Public Instruction, under the official control of a Minister of the Crown, with the title of Secretary for Public Instruction. State aid to non-vested schools was withdrawn from the 31st December, 1880.

The Act in force provides for two classes of schools, State and Provisional, State Schools to include schools conducted in buildings erected on land vested in the Department of Public Instruction, and Provisional Schools to be schools in which temporary provision is made for the primary instruction of children. As pointed out by the Director in a recent report, however, the term "provisional" is in many cases a misnomer, as the buildings are well and solidly built, and likely to fulfil all educational requirements in their districts for a considerable time. Half-time schools are provided in thinly-peopled areas, and itinerant teachers visit families in the remoter districts. One-fifth of the cost of State School buildings is provided by local voluntary subscriptions, the Department supplying the balance of the funds. The State defrays the whole cost of primary instruction, no school fees being charged. In the earlier years of the State's educational history fees were charged, ranging from sixpence to one shilling and sixpence per week for each scholar, but these were abolished at the beginning of 1870. The curriculum prescribed by the Act embraced the following subjects:—Reading, writing, arithmetic, English grammar, geography, history, elementary mechanics, object lessons, drill and gymnastics, vocal music and needlework for girls. Drawing was added to the curriculum in 1894, while, by an Amending Act passed in 1897, one or more subjects may be omitted in schools taught by one teacher only, and in other cases additional subjects may be added. Attendance at State Schools is compulsory for at least sixty days in each half-year in the case of children not less than six nor more than twelve years of age, except under certain well-defined circumstances. No religious instruction is allowed to be given in school during school hours, but persons desirous of undertaking this work can do so after hours on obtaining the permission of the Minister of Education.

4. **Primary System of South Australia.**—The history of public primary education in South Australia may be said to begin with the appointment of the Council of Education in 1875. Prior to that year the educational activity of the State was confined mainly to subsidising private institutions. In 1878 the powers of the Council were vested in the Minister of Education, and a permanent head was appointed. The Act of 1875 provided for the establishment of schools, and the training, classification, and remuneration of teachers, and made the attendance of children between the ages of seven and thirteen living within two miles of a school compulsory, until a certain standard of competency in reading, writing, and arithmetic was reached. Fees were charged, varying in amount at different periods from fourpence to sixpence a week, until in 1891 they were abolished, and education up to the compulsory standard was made free, children over thirteen years of age who remained at school after reaching this standard being charged a fee of one shilling per week. This charge was abolished in 1898; and any child above the age of five years may attend a State school without payment. In 1896, control of primary education was vested in a "Board of Inspectors." In 1902 an Inspector-General was appointed, his deputy being styled Assistant-Inspector-General. In 1906 the permanent head of the Department was styled Director of Education.

The primary schools are divided into two classes—public schools, taught by certificated teachers, ~~and~~ provisional schools, taught by uncertificated teachers, who have undergone a special examination and served for a certain time in an efficient school so as to gain a knowledge of practical work. Generally speaking, public schools must have an average of twenty or more pupils, while the provisional schools contain less than that number. The public schools are divided into twelve classes, and the salaries paid to the principals in general depend on the class of the school. For male head teachers the salaries range from £110 to £450, and for females from £80 to £156. In schools of the first class the sexes are, as a rule, taught separately, except in the case of infant schools.

Provisional schools are of four classes, and the salaries of the teachers range from £66 to £108 per annum, and in a few cases to £120. The maximum salary for a female provisional teacher is £84.

Wherever practicable, schools are visited by inspectors at least twice each year, the first visit being devoted chiefly to observation of general organisation, while a detailed examination is conducted on the second occasion. Individual examination is applied only in the subjects of arithmetic and spelling, the inspector judging of the success of the teacher's methods in other subjects by a general inspection.

The course of instruction to be given in all schools is decided on by the Director, subject to Ministerial approval. A detailed scheme is drawn up for all classes so as to secure general uniformity of effort throughout the State. The curriculum is, however, not an unelastic one, as teachers are, with the approval of the inspectors, allowed to make variations to suit particular circumstances, and considerable freedom of choice is allowed in dealing with such subjects as elementary science, agriculture, horticulture, and various kinds of manual work. The subjects taught include reading, writing, spelling, arithmetic, English, geography, English history, poetry, drawing, singing, nature study, moral lessons, manual work, drill, and needlework for girls. In a few schools the elements of Latin, German, Algebra and Euclid are taught. Books and school materials are supplied to the children at cost price, and are given free to those unable to pay for them. Compulsory attendance is in force, the scholars in or near corporate towns being required to attend for at least four-fifths of the time during which the school is open. Outside these limits, the compulsory attendance for children within three miles of a school is thirty-five days per quarter. The percentage of irregular attendance at present is small, and shews signs of still further decreasing.

5. **Primary System of Western Australia.**—The Elementary Education Act of 1871 provided for two distinct classes of schools in this State. In the first class were comprised the Government schools, established and supported by the Government, and controlled by a Central Board of Education. Teachers were appointed by a District Board, subject to the approval of the Central Board. The second-class comprised the assisted schools. In the establishment of those the Government took no part, but paid a yearly grant towards their upkeep. Under the 1871 Act education was compulsory, but was not free except in cases of absolute poverty. The Elementary Education Act Amendment Act of 1893 abolished the Central Board, and transferred its powers to the Minister of Education, and inspectors and teachers were appointed by the Governor. Provision was made by this Act for the right of entry by clergymen or other religious teachers into all Government schools for the purpose of instructing pupils who desired it in the tenets of their particular faith. The period allowed for this special instruction was not to exceed half an hour each school day. "Secular" instruction was also given by the regular teachers, and was described as including general religious teaching as distinguished from dogmatic or polemical theology. Attendance at general religious instruction was not compulsory. These provisions are still in force, and work quite satisfactorily.

In 1895 the Assisted Schools Abolition Act was passed, a sum of £15,000 being paid to the schools formerly assisted by the Government.

By the Public Education Act of 1899 school fees were abolished in public elementary schools in the case of children between six and fourteen years of age. For scholars over fourteen a fee may be charged, but so far the only fees charged have been sixpence per week for those over sixteen. Daily attendance is compulsory for children between six and fourteen, the compulsory radius being three miles for children over nine, and two miles for those under that age. Non-Government schools must be declared "efficient" by the Education Department if attendance at them is to be recognised as fulfilling the requirements of the law. The registers of these schools must be open to the inspection of compulsory officers of the Education Department. Under the Education Act Amendment Act of 1905 proprietors or teachers of private schools are required to send monthly and quarterly returns of attendance to the Education Department in order that the compulsory officers may ascertain that no children are evading the law. The curriculum of the primary schools includes English (under which heading are grouped reading, recitation, spelling, grammar, composition and literature), writing and drawing, arithmetic, Scripture, history, geography, nature study, lessons on the laws of health and temperance, manual work, drill and singing. In the upper classes of the larger schools the boys take a course of elementary geometry, algebra, and mensuration, and both boys and girls take a course of elementary science. Certain other subjects may be taken by permission of the Department in the sixth and seventh standards. As is the case in most of the other States, inspectors visit the schools at least twice in the course of each year, the first visit being for observation of methods of teaching and general organisation, and the second being devoted to estimation of the actual results of the teaching.

6. **Primary System of Tasmania.**—There are no official records conveniently available for tracing the history of public education in Tasmania prior to the year 1839, but it appears that some sort of denominational system was previously in existence. In January, 1839, there were twenty-two schools in operation with an enrolment of 758 scholars, receiving Government aid to the amount of about £2000 per annum. Shortly afterwards a Board of Education nominated by Government assumed control of State education, and considerably widened its scope. Only undenominational religious teaching was allowed in the schools, but clergymen had the right of giving instruction in their particular tenets at stated periods. About the year 1846 the system of subsidising denominational schools at the rate of a penny a day for each child present was introduced. This charge had the effect of withdrawing half the schools from the control of the Board and brought about the resignation of that body in 1848. The system was carried on under direct Government control until 1853, when another Board of Education was created, which continued till 1857, when two Boards—a Northern and Southern—were appointed. This arrangement lasted till 1863, when a reversion was made to a single Board with headquarters in Hobart. This administration continued till 1884, when the control again passed direct to the Chief Secretary until the coming into operation of the Education Act of 1885, which created an education department under the control of a Minister of the Crown, assisted by a professional head styled "Director of Education." This method of administration is still in existence. School fees are still paid in Tasmania, but at a much lower rate than formerly, and it is proposed to abolish them entirely. Prior to the Act of 1885 the cost of buildings was borne partly by the people, but the Act provides for meeting such expenditure entirely from the State funds. In the year 1904, owing to a feeling that public education in Tasmania was lagging behind that of the other States, the Government decided to have an investigation made by an independent expert. In consequence of the report received, the Ministry decided on a complete reorganisation. The chief improvements entered upon—and now at different stages o advancement—are as follows:—Classification of schools, regulation of salaries, provision for more up-to-date buildings, reorganisation of teaching and inspection methods, initiation of schools of instruction for teachers, and abolition of pupil-teacher system. Generally speaking, the educational system of Tasmania may be said to be organised very much on the lines of the leading systems of the mainland, although such subjects as manual work, nature study, and drawing have as yet been little developed. Attendance at school is compulsory for children between the ages of seven and thirteen. School fees range as follows:—All children under seven years of age, free; from seven to thirteen years, fourpence a week, or three shillings per quarter; above thirteen years, eightpence per week, or six shillings per quarter. No family pays for more than four children, or more than one at the over thirteen rate. Free education is granted where inability to pay is shewn. District Boards of Advice are in existence, but under the Local Government Act—to come into force at the end of 1907—their functions will be assumed by the new municipal councils.

7. **Primary System of New Zealand.**—In the earlier years of the colony's history, from the period 1853 to 1876, New Zealand was divided into provinces under separate governments. Between 1855 and 1857 some system of public primary instruction was established in each of the principal provinces, the schools being administered by local committees, and by a central Board or other authority at the provincial capital. The expenses were variously paid out of capitation charges on householders and on children, out of rates on property, out of fees and donations, and out of grants from the provincial treasuries. Religious instruction was provided in the schools. After the abo-

lition of the provinces, in 1876, the existing provincial systems of education remained in operation until superseded by the present system, which came into force at the beginning of 1878, and continued in operation without material change for about twenty-five years. The present system differs from most of its provincial predecessors in being at once free, compulsory, and secular, but it still bears traces of its provincial origin in the retention of a provincial administration by Boards, as well as the central administration by the Education Department, the teachers, and even the inspectors of schools, being officers not of the Department, but of the Boards.

(i.) *Education Districts.* The colony is divided, for purposes of primary education, into thirteen education districts, generally coextensive with the old provinces, or with subdivisions of them. The education districts are subdivided into a large and increasing number of school districts, in each of which there is a School Committee of five to nine members, elected annually by the householders. In each education district there is an Education Board of nine members, elected three every year, for terms of three years, by the members of the School Committees. Under an Act of 1905 every education district is divided into three wards, each of which returns three of the nine members of the Board. Subject to general supervision and control by the Board, and to inspection by the Board's Inspector, the Committee has the management of school business within the school district. The Board appoints and removes teachers, but only after consulting the Committee. It also manages the public school cadet system.

(ii.) *Education Department.* The Education Department, which is presided over by the Minister of Education, is charged, in the first place, with the general supervision and control of the system of primary instruction, and, further, with the development and extension of a general system of secondary and technical instruction; also with the direct control of the schools for children of the Maori race, the schools for destitute, neglected, and criminal children, and the school for deaf-mutes, and with the distribution of the grants made by Parliament to public libraries. The Minister is required by statute to report to the Governor every year on the progress and condition of public education in the colony. In order to provide suitable reading matter for the children in the public schools the Department prepares and issues a free school journal.

The precise manner in which the provisions of the various statutes that relate to the public primary schools shall be carried out is fixed from time to time by regulations made by the Governor-in-Council. Among the matters so controlled by regulation are the following:—Attendance registers and returns, the authorisation of class-books, the inspection and examination of schools, teachers' certificates, training colleges for teachers, pupil teachers, examinations for scholarships tenable at secondary and technical schools, for entrance into the public service and for promotion in it, manual and technical instruction, scholarships, public school cadet corps, staffs of schools and salaries of teachers, the payment of grants to Education Boards and the auditing of Boards' accounts.

One of the principal functions of the Department is to distribute to the Boards, in the manner prescribed by law, the grants voted by Parliament for the salaries of teachers and for the maintenance of primary schools and training colleges, and secondary and technical classes, and for the erection and repair of school buildings.

From 1878 to 1901 the primary schools were maintained mainly by a statutory grant out of the consolidated revenue of the colony at the rate of £3 15s. a year for every unit of the average daily attendance, supplemented by additional capitation allowances varying from four shillings to ten shillings, and by grants averaging about £45,000 a year for the erection and maintenance of school buildings. During that time every Board had its own scale of staffs and salaries, and there was considerable inequality in the remuneration of teachers under different Boards. But "The Public School Teachers' Salaries Act 1901" fixed the relation of the number and the pay of the teachers in a school to the number of the pupils, and the Boards are now paid sums sufficient to cover the statutory salaries of their teachers, besides capitation of eleven shillings and threepence for general purposes and one shilling and sixpence for secondary scholarships, and variable smaller grants for other special purposes, and grants for school buildings as before, but upon a much more liberal scale. About two-thirds of their total income is absorbed in the payment of teachers' salaries. The remainder forms the fund out of which the Board maintains its schools and other buildings, pays the salaries of its inspectors and of its office staff, and grants certain allowances to the Committees for fuel, cleaning, and incidental expenses, and for school libraries. The fund at the disposal of a Committee may be supplemented by donations and subscriptions, and by fines recovered for truancy. The sums granted to the Boards in 1905 for all purposes connected with primary instruction amounted to a total of £614,315, which is equal to a capitation of £4 9s. 3½d. on the average attendance.

No fees are chargeable for primary instruction at the public schools. Neither members of Education Boards nor members of School Committees receive any remuneration for their services.

The schools are open to all children between the ages of five and fifteen, and attendance is compulsory from seven to fourteen. The instruction is entirely secular, though religious instruction may, with the consent of the Committee, be given in the school building out of school hours. The subjects of instruction are reading, writing, arithmetic, English grammar and composition, geography, history and civic instruction, moral instruction, nature study, and elementary science, drawing, vocal music, the principles of health, physical and military drill, handwork, and, for girls, needlework.

There is no public institution in the colony for the instruction of children under five years of age, but free kindergartens have been established by private promoters in some of the largest towns. On attendance at such schools capitation is, by special arrangement, payable by the Government at the rate of £2 per annum per unit of average, subject to certain conditions which provide for a minimum limit in salary payments, and further require an equal sum to be furnished from other sources—*e.g.*, from donations and subscriptions.

The course of studies at the Native schools differs to some extent from the public school course, and the standards of examination are somewhat lower in certain subjects, in view of the fact that the Maori pupil has to acquire the English language in addition to his own, and that all the instruction is given in what is to him a foreign tongue. Maoris are admitted into the village schools below the age of five, and are allowed to remain in them after the age of fifteen. Besides the Government schools there are twelve denominational schools, subject to inspection by the Education Department, of which six are day-schools and six are boarding-schools. At one of the latter there is a class for Maori boys preparing for matriculation at the University.

§ 2. State Schools.

1. **Enrolment and Attendance.**—The following table shews the number of State Schools, together with the teachers employed and the enrolment and "average attendance" in each State and New Zealand during the year 1906:—

STATE SCHOOLS, TEACHERS AND SCHOLARS, 1906.

State.	Schools.	Teachers.	Enrolment.	Average Attendance.
New South Wales	2,885	5,563	207,741	151,261
Victoria	1,953	4,239	203,119	142,216
Queensland	1,055	2,401	89,488	69,771
South Australia	708	1,316	57,270	40,489
Western Australia	367	843	29,352	24,973
Tasmania	340	546	22,622	13,730
Commonwealth	7,308	14,908	609,592	442,440
New Zealand	1,847	3,872	139,302	121,958

Unfortunately, the scheme of enrolment and of the computation of "average attendance" is not identical in each State, so that the comparisons are imperfect. That the educational statistics of each State of the Commonwealth should be made up in the same way is much to be desired.

The enrolment and average attendance at the State Schools in the Commonwealth are given below for the year 1891, and for each year of the period 1896 to 1906:—

ENROLMENT AND ATTENDANCE AT STATE SCHOOLS 1891 TO 1906.

Year.	Total Population.[1]	Enrolment.	Average Attendance.	Year.	Total Population.[1]	Enrolment.	Average Attendance.
1891	3,240	561,153	350,773	1901	3,826	638,478	450,246
1896	3,553	568,314	393,176	1902	3,883	636,888	455,482
1897	3,618	586,037	411,913	1903	3,927	629,269	446,539
1898	3,665	594,916	397,027	1904	3,984	625,594	445,709
1899	3,716	608,431	424,214	1905	4,052	621,534	442,808
1900	3,765	623,707	441,924	1906	4,119	609,592	442,440

[1] In thousands.

It will be seen from the above table that, despite the increase of population, there has been a considerable decline both in official figures of enrolment and average attendance at the State Schools of the Commonwealth during the last five years. An examination of the graph on page 215, shewing birth-rate, will make it apparent that this is at least in part due to the diminished birth-rate of past years. This means that fewer children exist who need educational provision for school attendance in 1905 and 1906.

2. **Births and School Attendance.**—The table below gives the total births in each State and in the Commonwealth during each of the eight-year periods 1889-96, 1890-97. 1891-98, 1892-99, 1893-1900, and the average attendance at State Schools for each year from 1902 to 1906:—

COMPARISON OF BIRTHS AND SCHOOL ATTENDANCE.

Year.	New South Wales.	Victoria.	Q'land.	South Australia.	Western Australia.	Tasmania.	Commonwealth.
			TOTAL BIRTHS.				
1889-96 ...	310,327	286,967	116,688	83,824	16,179	38,967	852,952
1890-97 ...	310,279	281,918	116,600	83,068	18,606	38,894	849,365
1891-98 ...	307,541	274,512	115,126	81,674	22,013	38,661	839,527
1892-99 ...	304,544	267,015	114,310	80,344	25,401	38,364	829,978
1893-1900	301,649	259,963	114,208	78,951	29,007	38,263	822,041
			ATTENDANCE AT STATE SCHOOLS.				
1902 ...	155,916	150,268	72,809	43,500	18,448	14,541	455,482
1903 ...	154,382	145,500	69,759	42,752	20,283	13,863	446,539
1904 ...	153,260	145,122	68,661	42,234	22,111	14,321	445,709
1905 ...	151,033	143,362	68,780	41,807	23,703	14,123	442,808
1906 ...	151,261	142,216	69,771	40,489	24,973	13,730	442,440

A comparison of the two sets of figures in the above table will clearly explain the diminution in attendance at the schools, and bearing in mind that the population increased from 3,361,895 in 1893 to 4,119,481 in 1906, is a fact which challenges attention and demands serious consideration. The children at school in 1906 will naturally consist chiefly of those born in the period 1893-1900, the attendance for 1905 will be composed principally of the births in the period 1892-99, and so on. It will be seen that the total births in the octennial period declined in every instance except in the case of Western Australia, while Western Australia is the only State in which the school attendance did not decline during the quinquennium 1902-6.

3. **Centralisation of Schools.**—The question of centralisation of schools adopted so successfully in America is receiving some attention in the Commonwealth, and particularly in New South Wales. It is recognised that a single adequately-staffed and well-equipped central institution can give more efficient teaching than a congeries of small scattered schools in the hands of less highly-trained teachers, and the small schools in some districts were therefore closed and the children conveyed to the central institution. The principle was first adopted in New South Wales in 1904, when the conveyance of pupils was authorised in the case of twelve schools.

4. **Education in Sparsely-settled Districts.**—It has always been the aim of the State to carry the benefits of education into the remotest and most sparsely-settled districts. This is effected in various ways. (i.) By the establishment of Provisional Schools, *i.e.*, small schools in which the attendance does not amount to more than about a dozen pupils, these institutions merging into the ordinary public school list when the attendance exceeds the minimum. (ii.) When there are not enough children to form a Provisional School what are known as Half-time Schools are formed, the teacher visiting them on alternate days. In still more-sparsely peopled districts an itinerant teacher goes from house to house within a certain radius. In New South Wales parents in the thinly-peopled areas are also allowed to club together and build a school which receives aid from the Government in the form of a yearly subsidy and grant of school material.

5. **Higher State Schools.**—(i.) In *New South Wales* Public Schools, in which the subjects taught embrace, in addition to the ordinary course, such others as will enable the pupils to compete at the Senior and Junior University Examinations, are classed as *Superior Schools*. There were 142 of these schools in existence at the end of 1906. There are also five *High Schools* in the State—two for boys, two for girls, and one for boys and girls. These had an enrolment in 1906 of 723 pupils with an average attendance of 671. In twenty country centres the Superior Public Schools practically correspond to the High Schools, and the educational standards and instructional staff have been so arranged as to prepare for the University matriculation. It is intended also to adapt the teaching in these institutions to the special needs of the districts in which they are situated. Further, these High Schools and District Schools will be used as Preparatory Schools for the training of young persons who wish to become teachers. In order to provide teachers of agriculture provision is made for ten teacher-students annually to attend the second year's training at the Hawkesbury Agricultural College.

(ii.) In *Victoria*, what is termed a "*Continuation School*" has been established in Melbourne for the purpose of giving preliminary training to young people who propose to join the ranks of the teaching service, and it is hoped that ere long the supply from this source will preclude the necessity for the employment of inexperienced pupil-teachers. At the close of last year 200 students left the institution to commence their work in the schools. It is proposed to establish similar institutions at Ballarat and Bendigo.

(iii.) *Queensland* does not possess any distinctly Secondary Schools under State control, although it is proposed to establish High Schools in the more important centres at an early date. There are, however, ten Grammar Schools—six for boys, and four for girls, each of which receives an annual subsidy from the State. Further reference to these will be found later on.

(iv.) *South Australia.* During 1907 Continuation Classes for higher primary work were established in country centres. These classes are conducted in connection with the chief District Schools, and under the supervision of their head teachers. It is probable that they will ultimately be merged in Higher Primary Schools. The Advanced School for Girls was founded in 1879, and in addition to providing for winners of bursaries, receives paying pupils. From its foundation the school has taken a high rank, its pupils being very successful at the various University examinations. The average attendance during the year was ninety-three. During 1906 the total expenditure on secondary education was £2171, of which the Advanced School for Girls absorbed £1212.

(v.) *Western Australia.* With the exception of the Technical Schools and the Normal School referred to elsewhere, there is no distinctly Secondary School under the control of the State in Western Australia. It is proposed to establish shortly a large higher grade or Continuation School in Perth, in which the Normal School may be merged, and to establish similar institutions later on in other large centres of population. Evening Schools are held in various parts of the State, but the work carried on is mainly primary. The Perth High School for boys is subsidised by the State to the extent of £1000 annually.

(vi.) *Tasmania.* No direct provision has hitherto been made by Tasmania for public education of a standard intermediate between that of the State School and the University, but a few pupils are prepared in the ordinary State Schools for the Junior Public Examination of the University. It is intended to encourage this work in future, and the scheme of scholarships, which was discontinued for many years, has recently been revived. For a period of thirty years, from 1860 to 1890, there was in force in Tasmania a system under which the State, without actually providing educational agencies, did much to foster education within the range of the generally accepted High School curriculum, for the Council of Education during this period conducted public examinations of various grades, at which scholarships for juniors to "superior" schools were awarded, as well as exhibitions to British Universities. The Council also granted the degree of "Associate of Arts" in imitation of the similar Oxford title. Later on the Council of Education evolved and expanded into the University of Tasmania.

(vii.) *New Zealand.* There are in this colony some thirty high schools or colleges in operation under governing bodies who owe their corporate existence to various Acts, and derive a proportion of their revenue from public reserves. In the larger centres there are separate schools for boys and girls. The fees at these schools range from six to thirteen guineas a year per pupil, with an average of eight to ten guineas, but through an extensive system of scholarships and free places a large proportion of the students receive their education free. During the year 1906 the Government expended £19,498 on providing free places for deserving scholars in the various secondary schools. The staff employed at the end of 1905 in the schools consisted of 195 resident, and fifty-one visiting teachers, and the pupils on the rolls numbered 4060, of whom 2467 were boys, and 1593 girls.

6. **Agricultural Training in State Schools.**—The question of agricultural training in ordinary schools has received considerable attention in *New South Wales.* In 1905 a teacher of school agriculture was appointed to visit schools and districts for the purpose of giving instruction to teachers and scholars in the subject, the officer selected possessing the dual qualifications of a thorough acquaintance with agricultural work and school methods. Under the direction of a capable head master, a college has also been opened at Hurlstone, near Sydney, at which practical lessons will be given in elementary agriculture, and the institution may serve as a stepping-stone to the Hawkesbury Agricultural College.

The question of agricultural colleges and experimental farms will be discussed in the chapter dealing with Agriculture.

In addition to the regular courses of instruction given in the schools, the practice of carrying on "rural camps," where city schoolboys may gain some insight into the conditions of country life, has for some time been in successful operation.

In *Victoria* arrangements have been completed for opening what are termed Agricultural High Schools at Warrnambool and Sale. Pupils must be at least fourteen years of age, and have obtained a certificate of merit from the local school, or else be able to afford satisfactory proof that they are qualified to profit by the instruction offered. A local council is to be appointed for each school, and will exercise a general oversight over its operations.

Although *Queensland* possesses an Agricultural College and several experimental farms, there is no agricultural institution directly connected with the Education Department. The Government, however, provides a small grant to encourage the study of agriculture, horticulture, and kindred subjects in the State Schools, while experts from the Agricultural College and State farms periodically visit the schools in which elementary agriculture is taught, and give instruction to teachers and pupils.

In *South Australia* the Public Schools' Floral and Industrial Society, founded in 1880, holds annual exhibitions of school work from all parts of the State. In addition, it has for some years undertaken the distribution of flower seeds among school children at a very cheap rate, and has thus fostered the love of horticulture with remarkable success.

Beyond encouragement in the direction of making gardens in the school grounds little has been done in the way of practical agricultural training in the schools of *Western Australia* and *Tasmania*.

7. **Teachers in State Schools.**—The distribution of the teaching staff in the State Schools of Australasia during the year 1906 was as follows:—

TEACHING STAFF IN STATE SCHOOLS, 1906.

State.	Principal Teachers.		Assistants.		Pupil or Junior Teachers.		Sewing Mistresses.	Total.		
	Males.	Fem.	Males.	Fem.	Males.	Fem.		Males.	Fem.	Total.
New South Wales	2.198	508	668	1,334	298	461	96	3,164	2,399	5,563
Victoria	1,426	545	219	818	342	1,202	402	1,987	2,967	4,954
Queensland ...	625	429	383	629	144	191	—	1,152	1,249	2,401
South Australia ...	302	394	45	290	60	225	110	407	1,019	1,426
Western Australia	236	117	78	239	45	128	69	359	553	912
Tasmania ...	170	162	16	128	6	64	—	192	354	546
Commonwealth	4,957	2,155	1,409	3,438	895	2,271	677	7,261	8,541	15,802
New Zealand ...	1,052	791	262	1,096	153	518	—	1,467	2,405	3,872

It will be observed that there is a fairly large number of junior teachers, or pupil-teachers, as they are called in most of the States. The pupil-teachers will, however, in time disappear, and their places will be filled by young people who have undergone a course of training in schools specially provided for the purpose. Allusion to the methods of training will be found in the next paragraph.

8. **Training Colleges and their Development.**—(i.) *New South Wales.* Up to the year 1905 the teachers in New South Wales State Schools, generally speaking, commenced their career between the ages of fourteen and sixteen years, when they were known as "*pupil-teachers.*" As such, they were held responsible for the instruction of a certain number of children, and, in return for their services, received payment partly in the form of a small salary, and partly in teaching and advice from the principals of the schools wherein they were employed. *After serving about four years*, and subject to passing various examinations designed to test progress in pædogogics and ordinary book learning, a limited number of the *pupil teachers was' admitted to a course of training* in a training college if successful in passing the qualifying examination. On emerging from this institution, after a course of from one to three years, the teacher became known as an "assistant," and later on became master or mistress of a school. Pupil-teachers who did not enter the Training College were placed in charge of small country schools or appointed "assistants," and later on were allowed to compete in the examinations with the trained teachers; in fact, it was found temporarily to the advantage of teachers not to enter the College. Such was the career of

the "trained" teacher; but there was in addition a considerable body of untrained teachers who had commenced teaching in small country schools, and many of whom by perseverance and natural aptitude had gained positions of considerable importance in the Department.

Within the last few years in Australia, however, it has come to be recognised that the logical place of a scheme of training is antecedent to employment as a teacher, and with this end in view it has been decided to abolish the so-called pupil-teacher, and to establish Continuation Schools from which, as well as from the High Schools, the future supply of young teachers is to be drawn. It is hoped that the pupil-teacher as such will be extinct in a few years. In the meanwhile there were still as many as 759 employed at the end of 1906. Unfortunately, many of the smaller country schools will still have to be supplied by appointments of untrained persons; but it is hoped that under the new system of inspection the inspectors themselves will be able to devote a fair amount of time to instructing the teachers in correct methods. During vacations the country teachers will also have some opportunities of forming acquaintance with up-to-date ideas by attending Summer Schools, rural Camp-schools, etc.

The old Fort-street Training College for males, and the Hurlstone College for females were closed in 1905, and pending the erection of a properly-equipped institution in the University grounds the teachers are being trained at the Blackfriars Public School. Redfern. During 1906 there were 186 students in the institution.

(ii.) *Victoria*. The teachers in this State are trained by means of what is known as the "*junior-teacher*" system; *i.e.*, training of junior-teachers in the State Schools by the head masters, or by a two years' course in a junior training college—otherwise known as a Continuation School—supplemented by a course of training for two years in the Senior Training College at Melbourne. The junior teacher is, of course, not sensibly different from the pupil-teacher of New South Wales. In January, 1907, 160 students who had completed a two years' course at the Melbourne Continuation School were appointed as junior-teachers at State Schools of the third class. At the end of two years in these schools they may qualify for entrance to the Senior Training College for a further period of two years, at the end of which time they will be appointed to sixth-class positions as State School teachers at an annual salary of £120 16s. for men, and £90 to £100 for women.

The Melbourne Continuation School had in May, 1907, an enrolment of 221 first-year students, and 204 in their second year of training. Continuation Schools were opened in 1907 at Ballarat and Bendigo, and it is anticipated that there will shortly be a sufficient number of students in the Continuation Schools alone to meet the demands of the teaching service. The present junior-teaching system will then be modified to the extent that all candidates for the teaching profession will be required to graduate in one of the Continuation Schools.

The present Training College dates back to 1874, but during the retrenchment period it was closed, viz., from 1893 to 1900. The institution was reopened in February, 1900, with an enrolment of fifty-seven students. At the present time there are ninety-one students, of whom sixty-eight are resident and twenty-three non-resident. Since its reopening the College has also given attention to the training of Kindergarten teachers, and the course of study prescribed for infant teachers has received the sanction of the Education Department and also of the Kindergarten Association.

(iii.) *Queensland*. There is no training college in Queensland at the present time, but it is hoped ere long to establish one at Brisbane. Young people of both sexes are admitted to the service as pupil-teachers at the age of fourteen years, the only training received being that given by the principals of the schools to which they are appointed.

(iv.) *South Australia*. In this State young persons of both sexes who shew aptitude for teaching are required to demonstrate their fitness by serving as "*monitors*" for one year. After signing an agreement for service they are then admitted to the pupil-teachers' schools for two years' study, during which time they receive a small maintenance allowance. The next two years are spent in teaching in the schools. At the expiration of this time they are admitted to the University Training College, where the course of study is for two years. As the College is not a residential institution the State grants maintenance allowance of £30 to £50 per annum. On the conclusion of this period of training, which includes lectures in pædagogy and method, as well as a certain amount of practical teaching, the students are appointed as assistants. Salaries for males begin at £100 per annum, rising in six years to £150. Female assistants receive £72, rising to £124. The whole work of training teachers is undertaken by the University free of cost to the State.

(v.) *Western Australia.* A training college for teachers was opened at Claremont in 1902. The building provides satisfactory accommodation for sixty students, the number in training during 1906 being sixty-one. Central classes for "monitors" (*i.e.*, pupil-teachers) were established at Perth in 1903, and monitors outside the metropolitan area are instructed by correspondence. A Normal School was established in Perth in 1907 for the purpose of providing a two years' course of higher instruction for a limited number of children who had completed the State School course and intended to become teachers. The school accommodates thirty candidates who are admitted to a two years' course prior to being appointed as monitors in the large schools. If they give sufficient promise they may be admitted to the Training College after nine months' work in the schools. The course in the Training College lasts two years.

(vi.) *Tasmania.* The system of training adopted in Tasmania is as follows:—(*a*) The candidate is selected at fourteen years of age by a head teacher, and assists as a "*monitor*" for about a year, during which period he must give proof of suitableness for training. (*b*) At the end of this period there is a two years' course of training in the Training College. (*c*) The candidate then returns to his own school and teaches there for two years, the head teacher being responsible for his training in practical work, while the Training College authorities give lessons by correspondence. (*d*) The last stage is a final year in the Training College as a senior student. Some of the more advanced are granted a second year's training, and it is proposed to allow at least one each year to proceed to the Diploma of Education at the Melbourne Training College.

At present there is room in the Tasmanian Training College for about sixty students.

(vii.) *New Zealand.* For pupil-teachers who have satisfactorily completed their period of service, and for others who intend to become teachers, there are four training colleges, maintained wholly out of the public funds of the colony, and situated in the four chief centres of population, where are situated also colleges affiliated to the University of New Zealand. The management of the training colleges is entrusted to the local Education Boards, subject to general regulations, which include certain reservations for the approval of the Minister of Education. The standard of admission generally is that of the University Matriculation Examination, and the course pursued is brought into as intimate a relation as possible with the course of lectures in the University College adjoining. All students are required to attend lectures in the University College, to which the principal of the training college is in each case also attached as the University College lecturer on education.

For students in training allowances are provided. A student who has completed a pupil-teacher course receives an allowance of £30 a year, with a further allowance of £30 if he is obliged to live away from home to attend the college. Those who have not been pupil-teachers receive an allowance of £10 a year, and in all cases free instruction at the University College classes, approved by the principal, is also given. There are besides a number of boarding scholarships for students of the second group, placing the holders in the same position as if they had been pupil-teachers.

Provision is thus made for a course of training for a total of 320 students, eighty in each centre, a majority of whom are under an obligation to remain in attendance for two years. In the year 1905, which witnessed the inauguration of a more liberal scheme than that previously adopted, the amount spent on the training of teachers, including grants payable on classes for special subjects at various centres, and the salaries of teachers in the practising departments attached to training colleges, was £11,718. In the year 1906, with the four training colleges in full operation, the total cost was about £30,000.

9. **Expenditure on State Schools.**—The net expenditure in each State on primary education during each year of the period 1901 to 1906 is shewn below. The figures do not include expenditure on buildings, which is shewn separately in a later table.

EXPENDITURE ON MAINTENANCE, PRIMARY EDUCATION, 1901 TO 1906.

State.	1901.	1902.	1903.	1904.	1905.	1906.
	£	£	£	£	£	£
New South Wales	623,734	652,860	677,683	693,954	699,789	727,471
Victoria ...	656,907	681,282	669,376	670,182	663,580	663,302
Queensland ...	256,245	261,317	256,325	261,583	281,575	286,629
South Australia ...	152,006	151,462	147,297	147,842	151,242	152,713
Western Australia	89,182	102,811	116,533	116,690	121,896	134,193
Tasmania ...	37,710	48,161	48,300	50,018	44,974	45,683
Commonwealth	1,815,784	1,897,893	1,915,514	1,940,269	1,963,056	2,009,991
New Zealand...	457,477	496,156	492,324	481,231	504,739	547,872

The above figures are equivalent to an expenditure per head of average attendance as follows:—

COST PER HEAD OF AVERAGE ATTENDANCE, PRIMARY EDUCATION, 1901 TO 1906.

State.	1901.	1902.	1903.	1904.	1905.	1906.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
New South Wales	4 0 10	4 3 9	4 7 10	4 10 7	4 12 8	4 16 2
Victoria ...	4 7 0	4 10 8	4 12 0	4 12 4	4 12 7	4 13 3
Queensland ...	3 12 9	3 11 9	3 13 6	3 16 2	4 1 11	4 2 2
South Australia ...	3 9 5	3 9 8	3 8 11	3 10 0	3 12 4	3 15 5
Western Australia	5 8 7	5 11 6	5 14 11	5 5 6	5 2 10	5 7 6
Tasmania ...	2 12 11	3 6 3	3 9 8	3 9 10	3 3 8	3 6 6
Commonwealth	4 0 8	4 3 4	4 5 10	4 7 1	4 8 8	4 10 10
New Zealand...	4 1 10	4 7 3	4 7 1	4 2 7	4 3 11	4 9 10

Expenditure on school buildings in each of the years quoted was as follows:—

EXPENDITURE ON STATE SCHOOL BUILDINGS, 1901 TO 1906.

State.	1901.	1902.	1903.	1904.	1905.	1906.
	£	£	£	£	£	£
New South Wales	57,663	76,793	100,595	72,051	58,820	89,975
Victoria ...	36,040	81,946	39,369	19,502	32,041	39,184
Queensland ...	30,520	8,114	6,970	12,691	8,448	21,757
South Australia ...	13,656	11,250	11,805	9,056	9,094	13,340
Western Australia	48,448	32,218	35,360	32,175	35,345	39,217
Tasmania ...	7,762	11,931	6,710	4,427	4,809	3,456
Commonwealth	194,089	222,252	201,169	149,902	148,557	206,929
New Zealand...	60,103	61,763	94,991	83,509	101,583	150,344

The total net cost and the net cost per scholar in average attendance during the year 1906 were as follows:—

NET TOTAL COST PRIMARY EDUCATION, 1906.

Item.	N.S.W.	Vic.	Q'land.	S. Aust.	W. A.	Tas.	C'wlth.	N.Z.
Net cost of primary education, including buildings	817,446	702,486	308,386	166,053	173,410	49,139	2,216,920	698,216
Per scholar in average attendance	£5 8/1	£4 18/9	£4 8/5	£4 2/-	£6 18/11	£3 11/7	£5 0/2	£5 14/6

The average for the Commonwealth in 1901 was £4 9s. 3d. per scholar in average attendance.

§ 3. Private Schools.

1. **School Teachers, etc., in 1906.**—The following table shews the number of private schools, together with the teachers engaged therein, and the enrolment and average attendance for each State and New Zealand during the year 1906:—

PRIVATE SCHOOLS, 1906.

State.	Schools.	Teachers.	Scholars Enrolled.	Average Attendance.
New South Wales	852	3,557	58,707	46,942
Victoria	757	2,397	52,193	*41,800
Queensland	177	763	15,119	12,833
South Australia	215	718	10,545	9,753
Western Australia	108	263	7,515	6,382
Tasmania	204	612	7,979	*6,800
Commonwealth	2,313	8,310	152,058	124,510
New Zealand	308	899	17,131	15,054

* Estimated.

The figures given above are not quite satisfactory, the returns of New South Wales referring to the last quarter of the year only, while some difficulty has been experienced in obtaining complete figures for Victoria and Tasmania.

2. **Growth of Private Schools.**—The enrolment and average attendance at private schools during 1891 and in each year of the period 1896 to 1906 is shewn below:—

ENROLMENT AND ATTENDANCE AT PRIVATE SCHOOLS, 1891 TO 1906.

Year.	Enrolment.	Average Attendance.	Year.	Enrolment.	Average Attendance.
1891 ...	124,485	99,588	1901 ...	148,659	120,742
1896 ...	134,909	109,332	1902 ...	144,437	117,293
1897 ...	139,175	112,813	1903 ...	147,135	120,193
1898 ...	145,434	116,341	1904 ...	146,339	119,915
1899 ...	151,803	122,188	1905 ...	145,143	118,627
1900 ...	153,433	124,313	1906 ...	152,058	124,510

As the table shews, there was a continued increase in enrolment and average attendance up to the end of the year 1900, while from the latter year onwards there was a more or less persistent decline, although an upward movement is manifested in 1906. This falling-off was principally due to the decrease in the birth-rate during the period

1889 to 1900, a matter to which more extended reference has been made in previous pages.

3. Defects in Returns of Private Schools.—Throughout Australia, until quite recently, no administrative machinery existed by means of which supervision could be exercised over the course of education carried out under other ægis than that of the Departments of Education themselves. These Departments were without authority over the qualifications of the teaching staff, the equipments, the curricula, or general circumstances of private or denominational schools. With the exception of Western Australia. Victoria, and Tasmania this state of things continues to the present time.

Without a thorough system of registration of all schools (public and private) the certainty of the operation of the compulsory clause of Public Instruction Acts must necessarily be insecure. Proper statistical information, moreover, cannot be obtained without imposing upon all schools the duty of rendering complete and prompt returns in regard to enrolment, attendance, teaching staff, equipment, etc.

Recent educational criticism has led, not only to the better training of teachers in State schools, and, to some extent, in private schools, but also to a better recognition of the importance of accurate information as to the progress of educational events. It is understood that in New South Wales steps will be taken shortly to secure more adequate information as to the condition of schools generally.

In Victoria up to the year 1906 no attempt had been made to bring private schools under general administrative control; but in that year the Registration of Teachers and Schools Act of 1906 established a registration scheme under a special Board. This Board has now registered the private schools and teachers in the State, excepting, however, teachers of special subjects. The prime object of the Act is that after the lapse of a definite period there shall be no school of any kind in the State which does not comply with reasonable demands and requirements concerning the nature of its building, its equipment, and the qualifications of its teachers. The teachers who have registered belong to the following classes:—Sub-primary, 2400; primary, 3800; and secondary, 1500. Some teachers have registered under two or three grades, and the number of individual teachers is given as about 4500. The teaching staff of the Department of Public Instruction itself is not subject to the Registration Board. Registered private schools of all kinds number 840. The only control which the Government has on the scholars in private schools is provided by the law as to compulsory attendance, "efficient and regular instruction" in a private school being counted as adequate excuse for not attending the requisite number of days at a State school.

In Queensland there is practically no control over the private schools, beyond the fact that they may submit themselves to inspection if so desired, and there is apparently no provision in South Australia for any Government supervision over private school affairs.

In Western Australia, however, non-Government schools must be declared efficient by the Education Department if attendance at them is to be recognised as fulfilling the requirements of the law, and the school registers must be open to the inspection of the compulsory officers of the Department.

In Tasmania the Education Act requires the teachers of other than State schools "to furnish during January of each year returns shewing attendances at such schools." Despite the fact that penalties are prescribed for non-compliance with the law, nevertheless many teachers neglect to return the forms sent out. Provision has been made for registration of private teachers and schools very much on the lines adopted in Victoria. The Act declares that all persons who were employed in a *bonâ fide* manner for at least three months before 25th October, 1906, are entitled to be registered as teachers without submitting proof of professional qualifications. No person can be registered as a private teacher after July, 1907, unless the Board has been satisfied as to his fitness for the work.

4. Expenditure on Higher Private Schools.—In order to avoid disclosing results for individual institutions, returns received from some of the more important of the private schools in each State have been combined, and show the following results.

The figures for values of buildings and sites are in some instances only very crude approximations:—

Items.	N.S.Wales	Vict.	Q'land	S. Aust.	W. Aust.	Tas.	C'wealth.
Higher Private schools*	5	9	10	4	3	6	37
Attendance	610	2,419	934	1,008	432	595	5,998
Cost of buildings† ...	£226,500	£335,000	£136,650	£126,000	£48,000	£39,250	£911,400

* Furnishing returns. † Including sites.

§ 4. Universities.

1. **Sydney University.**—The movement for the establishment of the University of Sydney may be said to have originated as far back as 1825 with the institution of the old Sydney Grammar School, whose first head master, the Rev. Dr. Halloran, is credited with being "the founder of anything like the means of obtaining a classical education in Sydney." The original school was not, however, very successful, and it was succeeded in 1830 by a trustee institution known as the Sydney Public Free Grammar School. By way of endowment a sum of £10,000 was raised in £50 shares, each of which entitled the holder or his executors to the right in perpetuity of having one boy a student at the College. The building was opened for the reception of students in 1835, and was located on the site of the present Sydney Grammar School. In 1849 the proprietors of the institution presented a petition to the Legislative Council, having for its object the conversion of the College into a University. Upon the presentation of this petition the following motion was brought forward by Mr. W. C. Wentworth—"That a select committee be appointed to inquire into *the matters contained in the petition of the proprietors of the Sydney College*, and report upon the best means of instituting a University for the promotion of literature and science, to be endowed at the public expense." The motion was agreed to, with the omission of the words in italics, in order that the committee might have an absolutely free hand in dealing with the matter. The motion was presented on the 6th September, and the committee brought down its report on the 21st of the same month. It recommended the establishment of a University without delay, and suggested an endowment of £5000 a year with £30,000 for a building fund. An important provision in the report was that which specified that the University must belong to no religious denomination and require no religious test. With regard to the first Senate, it was proposed that there should be three *ex officio* members—the Chief Justice, the Colonial Secretary, and the Attorney-General—and nine others to be nominated by the Legislative Council, that there should be a Provost and Vice-Provost, and that the other members should be termed Fellows, that until there should be a hundred graduates, any vacancy in the body should be filled by the surviving or continuing members, but afterwards by election by the graduates.

In its original form the Bill met with considerable opposition, particularly in regard to the proposed absence of religious formularies. It was reintroduced to the Legislative Council in August, 1850, and the second reading was carried on the 11th September. The nomination of the first Senate was left to the Executive Council, and the number of Senators was raised to sixteen. The Act of Incorporation received the assent of the Governor on the 1st October, 1850, and the first Senate was appointed on the 24th December of that year. Mr. Edward Hamilton, M.A., was elected Provost, and Sir Charles Nicholson, M.D., Vice-Provost. Professorships were soon instituted in classics, mathematics, and chemistry and experimental philosophy, and the gentlemen selected to fill these posts arrived in Sydney in 1852. The first matriculation examination was held in October of this year, and twenty-four candidates succeeded in passing the test. The formal inauguration ceremony was held on the 11th October in the large hall of the Sydney College building. Originally it was intended to purchase this college from the trustees, but later on it was deemed essential to secure a larger area of ground, and to erect more commodious premises, and the Government in 1855 granted 128 acres at Grose Farm where the existing University and Colleges are situated. A sum of £50,000 was also granted for the erection of buildings, on consideration that not more than £10,000 should be spent in any one year. Chiefly through the exertions of Sir Charles Nicholson a Royal Charter was granted to the University on the 27th February, 1858. This document, amongst other things, declared that "the degrees of Bachelor of Arts, etc., already granted or conferred, or hereafter to be granted or conferred by the Senate of the said University of Sydney, shall be recognised as academic distinctions and rewards of merit, and be entitled to rank, precedence, and consideration in the United Kingdom and in our colonies and possessions throughout the world as fully as if the said Degrees had been granted by the University of the said United Kingdom."

The present main University building was commenced in 1854 and finished in 1860, at a cost of £80,000. The Great Hall, which has a length of 135 feet, by a breadth of forty-five feet, is considered by competent judges to be a masterpiece of architectural art. Classes were first held in the completed portion of the building in 1857. Under the original deed of grant of lands for University purposes provision was made for sub-grants for the erection of colleges in connection with the Church of England, Roman Catholic, Presbyterian, and Wesleyan Methodist Churches. St. Paul's College was incorporated by an Act passed in December, 1854, and the building in an incomplete form was opened in 1858. The Act of Incorporation of St. John's was dated 15th September, 1857, while St. Andrew's was incorporated under Act 31 Vic. The right of the Wesleyan body to a grant lapsed in 1860, and efforts to revive it have not been successful. The Women's College was opened in 1892, women being admitted as students of the University in 1881. Prince Alfred Hospital, incorporated in 1873, and erected at a cost of upwards of £180,000, is also situated in the University grounds.

Under an Act passed in 1881 graduates from other recognised Universities were admitted to the rights and privileges of members of the Sydney University, and the same Act also provided for an extension of the academic franchise to B.A.'s of three years' standing. Similar privileges were conferred on Bachelors in the other faculties by the Act of 1884.

As previously stated, there were only three professorships at the inception of the University. Up to 1880 the endowment stood at £5000 per annum, and, practically, the whole of this sum was absorbed in providing for the Chairs of Classics, Mathematics, Chemistry and Physics, and Geology and Mineralogy. The endowment was increased by £1000 in 1880, and it is from this year that the real expansion of the University began, its growth being largely assisted by the munificent Challis bequest, which originally amounted to about £190,000, and is now valued at £268,224. The Chair of Law was established in 1890, although prior to that time lectures in various branches of law were delivered by several lecturers.

The present fine Medical School started from very humble beginnings. Pending its erection a Chair of Anatomy and Physiology was established in 1883, and lecturers were appointed in various medical subjects, the teachers and students being accommodated in the main building until the Medical School, which cost £80,000, was completed.

A separate Faculty of Science was established in 1882, and the Chair of Natural History was divided into the three professorships of geology, physical geography and biology. The teaching of engineering commenced in 1882 with a lectureship, but in 1884 the position was elevated to a professorship.

The School of Mines was established in 1892.

The progress of the engineering section of the University was greatly assisted by a donation in 1896 of £50,000 from Sir (then Mr.) Peter Nicol Russell, which he most generously supplemented by a second donation of £50,000, making £100,000 in all, in 1904.

Pharmacy students were admitted to the prescribed University courses in 1899, and a Dental School was opened in 1901.

At the present time there are altogether seventy-nine teachers engaged in the Sydney University, of whom sixteen are professors, thirty-four lecturers, and twenty-nine demonstrators.

2. University of Melbourne.—The University of Melbourne was established by an Act of the Parliament of Victoria, which received the Royal assent on the 22nd January, 1853, and its first Council was appointed by proclamation dated the 6th April of that year. The foundation stone of the main building was laid on the 3rd January, 1854, and the University was formally opened on the 13th April, 1855.

The original Act was subjected to various amendments, and, by a measure passed on the 10th July, 1890, the law relating to the University was consolidated. The principal provisions of this measure were as follows:—By section 4 the University is declared to consist of a Council and of a Senate, and is proclaimed to be a body corporate and politic under the name of "The University of Melbourne," by which title it is to have perpetual succession and a Common Seal, etc. Section 6 declares that the Council shall be elected by the Senate, and shall consist of twenty male members. Teachers in the University may be represented on the Council, but the number of such members is not to exceed three. This Council is to have the entire management of the University. By section 23 it is expressly provided that no religious test is to be applied in order to entitle persons to be admitted as students to the University. The endowment was fixed at the sum of £9000 per annum. It is provided by section 25 that the Council may grant degrees in any faculty except Divinity, its powers in regard to all diplomas being the same as those of any University in the United Kingdom. The provisions of the Act apply equally to both sexes, but the Council may, if it thinks fit, exclude females from attendance at any lectures, but not from any examination in the University. Further amendments were introduced by the Acts of 1903 and 1904, the latter Act providing for three additional members of the University Council. Provision was also made for increasing the University endowment during the ten years commencing in July, 1904, by additional annual grants of £11,000, the purposes for which the additional grants were made being (*a*) to afford increased facilities for carrying on scientific and laboratory training in mining and agriculture; (*b*) to enable the University to co-operate with schools of mines and agricultural colleges throughout the State in order to ensure a wider sphere of usefulness for these institutions; and (*c*) to provide for the admission to the University of students in mining and agriculture without their having passed the full matriculation examination. Provision was made for a further grant of £1000 in case the University provided evening lectures in mining, agriculture, and education.

At present the University grants degrees in Arts, Medicine, Surgery, Law, Engineering, Mining Engineering, Science, Music, and Dental Surgery. Including that of Music, there are altogether sixteen professorships in the University, twenty-six lecturers, six lecturers and demonstrators, ten demonstrators, and thirteen assistant demonstrators.

Students of colleges affiliated to the University are allowed credit for attendance on such of the courses of lectures in the college as are recognised in the Statute of Affiliation, and are permitted to proceed to any degree, provided the requisite examinations in the University have been passed.

Trinity College, opened in 1872, was the first University College established in Victoria, and was founded under the auspices of the Church of England. The college staff consists of a warden and ten lecturers.

Ormond College, founded by the Presbyterian body, was opened in March, 1881, but there is no restriction at present as regards the religious denomination of the students. The lectures of the Theological Hall of the Presbyterian Church of Victoria are delivered by a special staff. The general staff consists of a master, vice-master, three resident tutors, and eleven lecturers and visiting tutors. The college is named after Mr. Francis Ormond, whose benefactions to it amounted to over £100,000.

Queen's College, founded by the Wesleyan Church, was opened in 1888. Its teaching staff consists of a head master and eight tutors.

The Australian College of Dentistry was affiliated in 1906, the University obtaining certain rights in regard to the control of the college, and undertaking to recognise the professional teaching given therein in connection with the degree of Dental Surgery.

3. **University of Adelaide.**—This University was established by Act of Parliament in 1874, and by Letters Patent granted in 1881 its degrees were recognised as on the same footing as those granted in any University in the United Kingdom. The foundation of the University was rendered practicable by the munificent gifts of Sir Walter Hughes and Sir Thomas Elder, each of whom contributed £20,000 towards its establishment. The University Act of 1874 also provided for an annual grant equal to five per cent. on the funds possessed by the institution, but stipulated that the total endowment thus given was not to exceed £10,000 in any single year. The Act also provided an endowment of 50,000 acres of land, and a grant of five acres for a site in the city of Adelaide.

When first constituted there were only four professorships in the University—(1) Classics and Comparative Philology and Literature; (2) English Language and Literature, Mental and Moral Philosophy; (3) Mathematics; (4) Natural Science, the endowments for these being provided for by the gifts of Sir Walter Hughes and Sir Thomas Elder.

Lectures commenced in March, 1876, with a total of sixty students, of whom only eight were matriculants. The foundation-stone of the University buildings was, however, not laid until 30th July, 1879, and the formal opening of the institution took place in April, 1882. The total cost up to date was about £38,000. The munificence of Sir Thomas Elder also rendered possible the establishment of a School of Medicine, for as early as 1883 he made a further donation to the University funds of a sum of £10,000. Arrangements for a complete medical curriculum were perfected in 1886. The Angas Professorship of Chemistry, inaugurated in 1885, owes its origin to the munificence of the Hon. J. H. Angas, who provided a sum of £6000 for its endowment. The Chair of Music was established in 1884, and this was also largely assisted by Sir Thomas Elder, who contributed a sum of £300 annually to its upkeep. In 1890 the lectureship in Law, which had existed since 1883, was raised to a professorship. Considerable additions were made to the University library consequent on the gift since 1892 of upwards of £7500 by Mr. Robert Barr Smith. At present it contains about 19,000 volumes.

Sir Thomas Elder, who died in 1897, bequeathed to the University a sum of £65,000. the total donations of this public-spirited citizen amounting to nearly £100,000. According to the terms of his will £20,000 was apportioned to the School of Medicine, £20,000 to the School of Music, and the balance was made available for the general purposes of the University. The Elder Conservatorium of Music was, therefore, established in 1898, the building being finally completed in 1900. Considerable additions were made to the Engineering and Science Schools in 1901 and to the Medical School in 1902.

In 1903 an arrangement was entered into by the University Council with the Council of the South Australian School of Mines and Industries whereby the two institutions, to some extent, combine their resources in the provision of courses of instruction in mining engineering, metallurgy, mechanical engineering, and electrical engineering, and the allied bodies hold examinations and grant diplomas in various branches of Applied Science. The University also practically controls the Training College for public school teachers.

The University grants degrees in Arts, Science, Law, Medicine and Music, and diplomas in various branches of Applied Science and in Music.

It is interesting to note that the Adelaide University was the first Australian University to grant degrees to women, the power to do so being conferred by an Act of Parliament passed in 1880.

4. **University of Tasmania.**—The University of Tasmania was established by Act of Parliament assented to on the 5th December, 1889, the preamble stating that it was intended to supply to all classes without distinction encouragement for pursuing a regular and liberal course of education. A Council and Senate were provided for, to form. when duly constituted, a body politic and corporate, with perpetual succession and a Common Seal, and having the usual powers and privileges attached to such bodies. The Senate was to consist of male graduates of the University with the degree of Master or

Doctor, and of all other male graduates of three years' standing, together with certain other persons, but until the number of Senators reached fifty the Council was to administer the affairs of the University. Provision was made for the granting of degrees in Arts, Science, Law, Medicine, Music and any other specified subjects excepting Theology and Divinity, and also for the conferring of "*ad eundem*" degrees. The Council was empowered to make statutes for the affiliation or connection with the University of technical colleges and schools. It was expressly stated that no religious test was to be applied to persons desirous of joining the University. Appropriations from the Consolidated Fund of sums of £3000 in each of the years 1890 and 1891 were authorised for the endowment of the University. For 1892 and subsequent years the appropriation was fixed at £4000.

By an Amending Act passed in 1890 the number of Councillors was fixed at eighteen, of whom nine were to be elected by the Senate, and eight by members of both Houses of Parliament, while the remaining member was to be the Minister of Education. The University is housed in a building which was formerly a proprietary high school, and was acquired for University purposes by Act of Parliament dated 21st December, 1892.

By statute dated April 13th, 1905, the Zeehan School of Mines and Metallurgy became affiliated to the University. At the present time there are professorships in classics and English literature, mathematics and physics, and law and modern history, and lectureships in modern languages, chemistry and geology, mechanical engineering, applied mechanics, mechanical drawing and physics, classics, modern history, mental and moral science, and surveying, and an assistant-lectureship in geology.

5. **University of New Zealand.**—The University of New Zealand is a chartered corporation, governed by a Senate of twenty-four fellows, including the Chancellor and Vice-Chancellor. The fellows are appointed, four by the Governor-in-Council, eight by the governing bodies of the four affiliated colleges, four by the professorial boards of the same colleges, and eight by graduate members of the colleges. The fellowships are tenable for six years. The University is an examining and not a teaching body, and four teaching institutions are attached to it—the University of Otago, founded in 1869, at Dunedin; Canterbury College, founded in 1876, at Christchurch; Auckland University College, founded in 1882, at Auckland; and Victoria College, founded in 1897, at Wellington.

The University has power to grant the degrees of Bachelor and Master of Arts and of Bachelor and Doctor of Laws, Medicine, Science, and Music, and is seeking power to grant degrees in other faculties. Examiners for degrees in Arts and Science are appointed periodically, and are chosen from eminent scholars in their several departments in the Universities of the United Kingdom. The delay involved in sending the papers home for examination is held to be amply compensated for by the prestige which attaches to degrees conferred upon the impartial decision of distant and eminent examiners. The University receives from the colonial Treasury an annual subsidy of £3000, one-half of which is devoted to scholarships. The affiliated colleges are also handsomely endowed.

6. **Teachers and Students at Universities.**—The following table shews the number of professors and lecturers and the students in attendance at each of the Commonwealth Universities during the year 1906:—

University.	Professors.	Lecturers.	Students attending Lectures.		
			Matriculated.	Non-matriculated.	Total
Sydney	15	61	836	218	*1054
Melbourne	15	55	620	233	†853
Adelaide	9	25	409	217	626
Hobart	3	6	—	-	§62

* Including 142 females. † Including 128 females. § In 1904.

7. **University Revenues.**—The income of the Universities from all sources during the year 1906 was as follows:—

University.	Government Grants.	Fees.	Other.	Total.
	£	£	£	£
Sydney	13,500	16,640	18,807	48,947
Melbourne	21,000	18,918	558	40,476
Adelaide	6,815	10,414	5,280	22,509
Hobart (1905)	4,000	926	155	5,081

The column "Other" includes the receipts from private foundations. In the case of the Sydney University these were considerable, the Challis bequest alone representing property to the value of £268,224.

8. **New Zealand University.**—The latest returns shew that at Auckland University College, Victoria University College, Canterbury College, and the University of Otago, all of which are affiliated to the New Zealand University, there is a staff of sixty-four professors and lecturers. Students in attendance during 1906 numbered 1332, of whom 1048, including 369 females, were matriculated. Receipts for the year amounted to £9210, and expenditure to £6206.

9. **University Extension.**—Under a statute of the Senate of Sydney University, approved of in 1892, a Board was appointed, which was empowered from time to time to recommend to the Senate the names of suitable persons for giving courses of lectures, and to hold examinations in the subjects of the lectures. The Board receives and considers applications from country centres, and makes provision for engaging lecturers and managing the entire business connected with the various courses. The project has only met with fair success, no lectures having been given in some years, but lately there appears to be an awakening of interest in the matter. The Board also arranges for courses of lectures in Queensland. Information regarding the number of courses of lectures and attendance of students during the last five years will be found in the table below:—

Year.	Courses of Lectures in—				Average Attendance of Students.
	New South Wales.			Q'land.	
	Metropolis.	Country.	Total.		
1902	—	6	6	—	475
1903	2	1	3	9	1,015
1904	6	3	9	4	1,565
1905	6	2	8	4	1,640
1906	5	3	8	4	1,345

University extension lectures in Victoria date from the year 1891, when a Board was appointed by the Melbourne University for the purpose of appointing lecturers and holding classes and examinations at such places and on such subjects as it might think fit. Interest in University extension is apparently on the wane in Victoria, as lectures were delivered in five centres only in 1905 and 1906, as against eight centres in 1904.

The Adelaide University has also instituted short courses of extension lectures in Arts and Science, to which students are admitted on payment of a nominal fee. Public intimation of these lectures is made from time to time during the session. For 1907 a course of eleven lectures was provided—two in Chemistry, three in Science, three in Literature, and three in Law. The Tasmanian University provides for courses of lectures at Launceston, the lectures being delivered weekly by members of the University teaching staff.

§ 5. Technical Education.

1. **General.**—Although provision has been made in some of the States in respect to many necessary branches of technical education, the total provision made would imply that this branch of education has not been regarded as of great importance. As will be seen later on, the expenditure on this branch of education for the whole of Australasia is comparatively insignificant.

2. **New South Wales.**—The present organisation of technical education in this State dates from the year 1883, when a Technical Education Board was appointed as a result of suggestions made at the Technological Conference held in 1879. This Board continued its functions till November, 1889, when it was dissolved, and the work has thenceforward been carried on as a branch of the Public Instruction Department. The chief centre of activity is, of course, in Sydney, where the Technical College and Technological Museum are situated, the college having been opened for the reception of students early in 1892. Colleges have also been erected in some of the chief country towns, and classes in various subjects are held at a large number of public schools. The total number of classes in operation during 1906 was 654, of which 126 were held in Sydney, and 356 in the suburbs and country towns, while 172 were conducted at the public schools. The students enrolled numbered 15,594, of whom 7001 were in attendance at Sydney, 4338 in country districts, and 4255 at the classes held at public schools. The average weekly attendance was 9771. As mentioned elsewhere, higher technical training is afforded at the School of Mines and Engineering in connection with the University. Reference to agricultural colleges will be found in the chapter dealing with Agriculture.

3. **Victoria.**—Technical instruction in Mining has for many years received considerable attention in Victoria, the Ballarat School of Mines, which was established as far back as 1870, having achieved an Australasian reputation. The general scheme of instruction, however, lacked cohesion, and it was not until after the publication of the Report of the Royal Commission on Technical Education (which was appointed in 1899) that many defects were remedied. Including the Schools of Mines, the number of institutions receiving State aid in 1906 was seventeen, of which eight afforded instruction in Science, Art and Trade subjects, two in Art and Science, five in Art and Trade, and two in Art only. Science and Art classes have also been established at some of the larger State schools. The total enrolment in all classes in 1906 was over 7000, but, as this figure includes many duplicate enrolments, the average number in attendance would probably be about 4000.

4. **Queensland.**—Previous to 1902 technical colleges were carried on in connection with Schools of Art in many of the towns, under the control of local committees, by whom regulations were framed and the colleges administered. The aid granted by the State was £1 for every £1 raised locally, but no grant was to exceed the amount voted annually by Parliament. In 1902 a Board of Technical Education was formed, and held office from September of that year till the 27th May, 1905, and during this time devoted much energy towards the improvement of technical education in Queensland. The control, however, was removed from the Board in July, 1905, and vested in the Minister of Education, who appointed an officer of his Department to the position of Inspector of Technical Colleges. This officer reports on technical education generally, inspects the colleges, sees that the grants to the various colleges are spent to the best advantage, and so on. Examinations of students at the colleges were conducted by the Education Department, for the first time, in 1905, the papers being set by local experts, and, in some instances, by experts beyond the State. A differential scheme of endowment came into operation in 1906, the distribution being based on the general and practical utility of the subjects taught, and the subsidy ranging from ten shillings to £3 for every £1 of fees collected according to importance of subject and amount of apparatus required. At the

present time there are seventeen institutions known as technical colleges, and the average enrolments at these per term were 2500, while the enrolments for all terms of the year came to 918.

5. **South Australia.**—A considerable amount of attention has been given to technical education in South Australia, particularly in connection with the mining industry. The School of Mines and Industries, founded in 1889, afforded instruction during 1906 in forty-six subjects, and had an enrolment of 1493 students. Government aid to the extent of £4600 was granted to the institution during the year. There are also Schools of Mines at Moonta, Port Pirie, Kapunda, and Gawler, which had an attendance in 1906 of 430, 137, 120, and 172 pupils respectively. The School of Design Painting and Technical Arts in Adelaide had an enrolment in 1906 of 605 students, while there are also forty-six students at the Port Adelaide branch, and sixteen at Gawler.

6. **Western Australia.**—A technical school was established at Perth in 1900, and since its opening has progressed rapidly. The institution is affiliated with the Adelaide University, and it is hoped that the students will be shortly allowed to take the degree of B.Sc. without leaving the school. During 1906 the attendance of students in the various classes averaged 477. The branches established at Fremantle and Midland Junction were attended by 147 and twenty-two students respectively. The school at Boulder, which has only recently been opened, had an average attendance during the latter half of 1906 of 170 students. A small school has also been opened at Coolgardie, and classes are held at Kalgoorlie and Menzies. The schools are all under the control of the Education Department, the officer entrusted with their supervision being styled Director of Technical Education. The Director also supervises the School of Mines at Kalgoorlie, which is controlled by the Mines Department.

7. **Tasmania.**—In this State provision for technical education dates from the year 1888. At the present time the most important technical institution is the School of Mines and Metallurgy at Zeehan. Courses of instruction are given in metal mining and in metallurgical chemistry and assaying, the diploma in metal mining entitling the holder to the Government certificate of competency as a mine manager. The institution is affiliated to the University of Tasmania. There are also two other schools under the control of the Education Department, and each managed by a committee appointed by the Governor-in-Council. At the Hobart school twenty-nine classes in various technical subjects were in operation during 1906, and nine classes at Launceston. Tasmanian technical schools naturally devote their chief attention to mining and mineralogy.

8. **New Zealand.**—Technical classes for instruction in various branches of Pure and Applied Art, Science, and Technology, and in Domestic Economy and commercial subjects, and continuation classes providing instruction in subjects of general education, are conducted at about sixty places by the controlling authorities in the various education districts. The total number of classes working under the Regulations for Manual and Technical Instruction is about one thousand. There are now over twenty technical and art schools more or less completely equipped, at which instruction of the kind indicated is given. Regular instruction in handwork, in accordance with the abovementioned regulations, is also given at some 900 primary and secondary schools. In the lower classes the subjects most generally taught are modelling, brush drawing, paper and cardboard work, and free-arm drawing. In the upper classes instruction is given in cookery, woodwork, and various branches of science. Considerable attention is also given to elementary instruction in agriculture in connection with school gardens, of which there are about 100 in operation.

The total expenditure of the Government on manual and technical instruction for the year 1906 was about £63,403, of which £25,595 was paid in capitations not generally exceeding threepence a pupil an hour.

The Department conducts every year examinations in various subjects of Science, Art, and Technology on behalf of the Board of Education, South Kensington, and the City and Guilds of London Institute. Of the 789 candidates who presented themselves at the examinations held in 1906, 509 passed.

Seven schools of mines, chiefly for the benefit of working miners, are subsidised by the Government Department of Mines in the various mining districts of the colony. The public expenditure on these schools of mines for 1906 amounted to £2837. In connection with schools of mines four scholarships are offered annually—one each for Otago and the West Coast of the Middle Island, and two for the North Island. These scholarships entitle the holders to £50 a year for three years and free tuition at the Otago University. There are Chairs of Mining at the Otago University and the Auckland University College.

Higher technical instruction, on the professional plane, is given at several corporate and endowed institutions: A medical school and a school of mines at the University of Otago; a school of engineering and technical science at Canterbury College; and a school of mines at Auckland College. There is a well-endowed School of Agriculture. A special grant of £2000 a year is made to each of the four University Colleges for specialisation respectively in commerce and mining, in law and science, in engineering, and in mining, medicine, and veterinary science.

9. **Expenditure on Technical Education.**—The expenditure on technical education in each State and New Zealand during the period 1901-6 is shewn below:—

EXPENDITURE ON TECHNICAL EDUCATION, 1901 TO 1906.

State.	1901.	1902.	1903.	1904.	1905.	1906.
	£	£	£	£	£	£
New South Wales	23,154	25,540	26,459	25,762	25,262	26,764
Victoria ...	26,225	22,958	16,430	16,278	17,117	21,444
Queensland ...	10,397	11,728	7,294	6,395	5,055	6,803
South Australia ...	15,815	17,525	17,978	7,756	7,481	7,663
Western Australia	1,926	4,182	9,758	16,673	12,381	12,930
Tasmania ...	2,288	2,488	2,465	1,359	2,650	2,650
Commonwealth	79,805	84,421	80,384	74,223	69,946	78,254
New Zealand...	7,611	11,605	12,984	16,735	25,056	25,363

The figures in the preceding table represent an expenditure of only 1s. 3d. per head of the population of the Commonwealth, as compared with £1 16s. 3d. per head spent on primary education, and shew indubitably that technical education has not attained to its proper place in the educational organisation of Australia.

§ 6. Diffusion of Education.

1. **General Education.**—A rough indication of the state of education of the people is obtained at each Census under the three headings, "read and write," "read only," and "cannot read." The grouping of the whole population, exclusive of aborigines, in these three divisions is given at each Census since 1861:—

EDUCATION AT CENSUS PERIODS, 1861 TO 1901.

State.		1861.	1871.	1881.	1891.	1901.
N.S. Wales ...	Read & write	188,543	296,741	507,067	835,562	1,071,935
	Read only...	46,024	56,391	49,372	43,539	29,728
	Cannot read	116,293	149,866	193,386	244,853	253,183
Victoria ...	Read & write	328,362	478,464	653,346	908,490	998,010
	Read only...	57,351	70,953	47,950	32,794	21,852
	Cannot read	152,915	180,781	160,270	198,556	181,206
Queensland ...	Read & write	17,152	74,940	136,436	276.381	376,294
	Read only...	3,680	12,080	13,657	14,618	11,737
	Cannot read	9,227	33,084	63,432	102,719	110,098
South Australia	Read & write	72,190	117,349	200,057	236,514	290,748
	Read only...	18,535	21.509	15,267	9,571	8,283
	Cannot read	36,105	46,768	64,541	74,346	64,126
West. Australia	Read & write	7,683	14,166	19,684	34,254	150,099
	Read only...	1,301	2,717	2,430	2.061	3,107
	Cannot read	5,853	7,902	7,594	13,467	30,918
Tasmania ...	Read & write	48,282	55,941	74,966	103,138	133.579
	Read only...	13,136	13,946	9,606	6,287	3,907
	Cannot read	28,559	29,441	31,133	37,242	34.989
Commonwealth	Read & write	662,212	1,037,601	1.591,556	2,394,339	3,020,665
	Read only...	140,027	177,596	138,282	108,870	78,614
	Cannot read	348,952	447,842	520,356	671,183	674,522
New Zealand ...	Read & write	67,999	175,569	345,838	481,087	637,264
	Read only...	8,919	19,039	27,322	24,750	14,959
	Cannot read	22,103	61.785	116,773	120,821	120,496
Australasia ...	Read & write	730,211	1,213,170	1,937,394	2,875.426	3,657,929
	Read only...	148,946	196,635	165,604	133,620	93,573
	Cannot read	371,055	509,627	637,129	792,004	795,018

The proportion in the Commonwealth of the various classes per 10,000 of the population is shewn below for each census period:—

PROPORTION OF EDUCATED AND ILLITERATE PER 10,000 PERSONS. 1861 TO 1901.

Division.	1861.	1871.	1881.	1891.	1901.
Read and write	5.752	6,239	7,073	7.543	8,004
Read only...	1,217	1,068	615	343	208
Cannot read	3.031	2.693	2,312	2.114	1,788

2. **Education of Children.**—The figures in the preceding tables refer to the entire population of the States and New Zealand, and as the age constitution of those dwelling in the various portions of Australasia underwent considerable modifications during the period dealt with, a far more reliable test of the diffusion of education will be obtained by a comparison of the Census returns in regard to children of school age. For comparative purposes this has been taken to include all children in the group over five and under fifteen years of age, and the degree of education of these at each Census will be found below:—

EDUCATION OF CHILDREN AT CENSUS PERIODS, 1861 to 1901.

State.		1861.	1871.	1881.	1891.	1901.
N.S. Wales ...	Read & write	34,040	68,776	121,735	196,240	251,187
	Read only ...	20,345	26,886	25,100	21,375	15,934
	Cannot read	25,472	32,924	41,663	48,580	60.734
Victoria ...	Read & write	42,268	122,739	170,713	201,199	236,515
	Read only ...	25,518	39,636	25,249	15,656	13,128
	Cannot read	19,341	29,490	21,421	27,441	27,765
Queensland ...	Read & write	2,156	12,698	33,317	62,402	95,635
	Read only ...	1,534	6,104	7,019	7,580	5,955
	Cannot read	1,629	6,015	9,615	16,257	18,827
South Australia	Read & write	15,485	30,608	46,630	58,291	69,451
	Read only ...	8,748	12,432	7,926	4,618	4,229
	Cannot read	6,907	10,074	12,483	17,988	15.480
West. Australia	Read & write	1,333	3,218	4.418	6,910	25,326
	Read only ...	226	617	1.260	933	1,815
	Cannot read	1,015	1.795	1,593	2,348	5,431
Tasmania ...	Read & write	11,919	17,335	17,188	24,007	32,890
	Read only ...	2,848	4,143	4,108	2,974	1,795
	Cannot read	4,581	6,663	6,606	8,829	8,475
Commonwealth	Read & write	107,201	255,374	394,001	549,049	711,004
	Read only ...	59,219	89,818	70,662	53,136	42,856
	Cannot read	58,945	86,961	93,381	121,443	136,712
New Zealand ...	Read & write	9,729	33,569	86,002	124,855	139,161
	Read only ...	5,845	13,804	17,605	16,491	9,566
	Cannot read	18,899	7,398	21,920	25,811	22,234
Australasia ...	Read & write	116,930	288,943	480,003	673,904	850,165
	Read only ...	65,064	103,622	88,267	69,627	52,422
	Cannot read	77,844	94,359	115,301	147,254	158,946

In the case of Tasmania full details for the years 1861 and 1871 were not available, and the figures for those years are approximate. The variation in degree of education will be more readily seen by reducing the foregoing figures to the basis of proportion per 10,000, and the results so obtained are embodied in the following table, a glance at which is sufficient to demonstrate the remarkable strides that at least the lower branches of education have made since 1861. In that year only 45 per cent. of the children of school age could read and write, while 30 per cent. were illiterate. The returns for 1901 shew that the proportion of those who could read and write had increased to over 80 per cent., while the totally ignorant had declined by fully one-half:—

EDUCATION OF CHILDREN (AGES 5 TO 15) PER 10,000 AT CENSUS PERIODS. 1861 TO 1901.

State.		1861.	1871.	1881.	1891.	1901.
N.S. Wales ...	Read & write	4,263	5,349	6,458	7,372	7,662
	Read only...	2,547	2,091	1,332	803	486
	Cannot read	3,190	2,560	2,210	1,825	1,852
Victoria ...	Read & write	4,851	6,397	7,853	8,236	8,526
	Read only...	2,929	2,066	1,162	641	473
	Cannot read	2,220	1,537	985	1,123	1,001
Queensland ...	Read & write	4,053	5,116	6,670	7,236	7,942
	Read only...	2,884	2,460	1,405	879	495
	Cannot read	3,063	2,424	1,925	1,885	1,563
South Australia	Read & write	4,973	5,763	6,956	7,206	7,790
	Read only...	2,809	2,341	1,182	571	474
	Cannot read	2,218	1,896	1,862	2,223	1,736
West Australia	Read & write	5,179	5,716	6,076	6,780	7,775
	Read only...	878	1,096	1,733	916	557
	Cannot read	3,943	3,188	2,191	2,304	1,668
Tasmania ...	Read & write	6,160	6,160	6,160	6,704	7,620
	Read only...	1,472	1,472	1,472	830	416
	Cannot read	2,368	2,368	2,368	2,466	1,964
Commonwealth	Read & write	4,757	5,910	7,061	7,588	7,984
	Read only...	2,628	2,078	1,266	734	481
	Cannot read	2,615	2,012	1,673	1,678	1,535
New Zealand ...	Read & write	2,822	6,129	6,851	7,469	8,140
	Read only...	1,696	2,520	1,403	987	560
	Cannot read	5,482	1,351	1,746	1,544	1,300
Australasia ...	Read & write	4,500	5,934	7,022	7,565	8,009
	Read only...	2,504	2,128	1,291	782	494
	Cannot read	2,996	1,938	1,687	1,653	1,497

3. **Education as shewn by Marriage Registers.**—Another common method of testing the spread of education is to compare the number of mark signatures with the total number of persons married during each year of a series. The percentage of males and females signing with a mark to the total persons married in the Census years 1861 to 1901, and during each of the last five years, was as follows. The figures refer to marriages in the Commonwealth in respect of which information was obtainable:—

ILLITERACY AS SHEWN BY MARRIAGE SIGNATURES.

Year.	Proportion Signing with Marks of Total Persons Married.						
	Males.	Females.	Total.	Year.	Males.	Females.	Total.
	per cent.	per cent.	per cent.		per cent.	per cent.	per cent.
1861	18.50	30.69	24.60	1902 ...	1.21	1.11	1.16
1871	10.58	16.40	13.49	1903 ..	1.17	1.03	1.10
1881	4.34	6.78	5.56	1904 ...	0.95	0.91	0.93
1891	2.27	2.40	2.34	1905 ...	0.91	0.93	0.92
1901	1.35	1.29	1.32	1906 ...	0.92	0.86	0.89

The table shews that there has been a large diminution in illiteracy, and judging from the figures for the last few years the proportion bids fair to practically disappear. Up to 1891 there was a higher proportion of illiteracy amongst females, but from 1901 onwards, generally speaking, the opposite condition prevailed.

§ 7. Miscellaneous.

1. Scientific Societies.—Despite the trials and struggles incidental to the earlier years of the history of Australia, higher education and scientific advancement was not lost sight of. Thus the origin of the Royal Society of New South Wales dates as far back as 1821, when it was founded under the name of the Philosophical Society of Australasia, Sir Thomas Brisbane being its first president. It was not until the year 1866, however, that the Society received its present title. Some of the papers of the old Philosophical Society were published in 1825 under the title of "Geographical Memoirs of New South Wales," and contain much that is interesting in regard to the early history of Australia. The first volume of the Transactions of the Royal Society of New South Wales was issued in 1867, the title of the series being altered to Journal in 1876. Up to the end of 1906 forty volumes had been published. In addition to the publication of its own Proceedings, the Society obtains, by exchange or purchase, copies of the principal scientific and professional publications issued throughout the world, the exchange list comprising 432 kindred societies. At the present time the library contains about 19,000 volumes and pamphlets. In 1906 the members numbered 350.

The Royal Society of Victoria dates from 1854, in which year the Victorian Institute for the Advancement of Science and the Philosophical Society of Victoria were founded. These were amalgamatd in the following year under the title of the Philosophical Institute of Victoria, while the Society received its present title in 1860. The first volume of its publications dates from 1855. The earlier publications dealt largely with Physics, later on Biology became prominent, while at present the greater number of papers deal with Geology. The Constitution of the Society states that it was founded for the promotion of Art, Literature, and Science, but for many years past Science has monopolised its energies.

The inaugural meeting of the Royal Society of Queensland was held on the 8th January, 1884, under the presidency of the late Sir A. C. Gregory. The Society was formed "for the furtherance of the Natural and Applied Sciences, especially by means of original research." Shortly after its formation it received an accession to its ranks by the amalgamation with it of the Queensland Philosophical Society, which was started at the time when Queensland became a separate colony. Up to this period the Philosophical Society had published three volumes of Proceedings. The Royal Society has up to the present published nineteen volumes of Proceedings. In 1906 the number of members was 120.

The present Royal Society of South Australia grew out of the Adelaide Philosophical Society, which was founded in 1853, its object being the discussion of all subjects connected with Science, Literature, and Art. Despite this programme, the tendency of the papers was distinctly scientific, or of a practical or industrial nature. With the advent of the late Professor Tate the sphere of activity of the Society was considerably enlarged. Permission to assume the title of "Royal" was obtained in 1879, the Society thenceforward being known as "The Royal Society of South Australia." The latest returns shew that the list of members comprises 11 Honorary Fellows, 69 Fellows, 7 Corresponding Members, and 2 Associates. Thirty volumes of Proceedings have been published.

The principal Scientific Society in Western Australia is the West Australian Natural History Society, with which is incorporated the Mueller Botanic Society. The objects of this Association are the Study of Natural History, promoted by periodical meetings, field excursions, and the issue of Reports of Proceedings. The number of members at the present time is about 80.

The constitution of the Royal Society of Tasmania dates from 12th September, 1844, although Sir John Franklin had started a Scientific Society as early as 1838. The names of Captains Ross and Crozier, of H.M.S. *Erebus* and *Terror*, appear in the list of the first corresponding members. The main objects of the founders of the Society were to encourage investigation into the plant and animal life of Tasmania and into the mineralogical character and fossil contents of its rocks. At the present time the Society numbers about 40 members.

In addition to the societies enumerated above, there are various others in each State devoted to branches of scientific investigation, particulars respecting which are not at present available.

2. Libraries.—As far as can be ascertained the total number of libraries in the Commonwealth at the latest available date was about 1500, and the number of books contained therein two and a half millions. In each of the capital cities there is a well-equipped Public Library, the Melbourne institution especially comparing very favourably with similar institutions in other parts of the world. The following statement gives the number of volumes in the Public Library of each City :—

METROPOLITAN PUBLIC LIBRARIES.

City	Number of Volumes in—			Total.
	Reference Branch.	Ordinary Lending Branch.	Country Lending Branch.	
Sydney	143,386	29,331	6,924	179,641
Melbourne ...	168,079	23,514	...	191,593
Brisbane ...	33,631	*	*	33,631
Adelaide ...	60,655	23,776	...	84,431
Perth	63,683	...	2,163	65,846
Hobart	11,839	*	*	11,839

* No information.

The number of suburban and country libraries in each State, together with the estimated number of books contained therein, is given below :—

	State.					
	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.
Number of suburban and country libraries ...	462	423	172	168	196	42
Estimated number of books	750,000	708,930	195,452	294,241	98,000	89,000

The figures in the above table can be taken only as approximations, as in many instances returns were not received from various institutions.

The number of libraries in New Zealand, at the latest available date, was 430 containing, approximately, 720,000 volumes.

3. Museums.—The Australian Museum in Sydney, founded in 1836, is the oldest institution of its kind in Australia. In addition to possessing a fine collection of the usual objects to be met with in kindred institutions, the Museum contains a very valuable and complete set of specimens of Australian fauna. The number of visitors to the institution last year was 146,360, and the average attendance on week-days 432, and on Sundays 619. The expenditure amounted to £7037, of which £5370 was absorbed by salaries and allowances, and £1667 by purchases and miscellaneous. The specimens received in 1905 and 1906 numbered 13,500 and 18,900 respectively. Representative collections, illustrative of the natural wealth of the country, are to be found in the Agricultural and Forestry Museum, and the Mining and Geological Museum. The latter institution prepares collections of specimens to be used as teaching aids in country schools. The "Nicholson" Museum of Antiquities, and the "Macleay" Museum of Natural History, connected with the University, are also accessible to the public. There is a fine Technological Museum in Sydney, with branches in five country centres, the metropolitan institution containing over 93,000 specimens. Valuable research work has been undertaken by the scientific staff in connection with oil and other products of the eucalyptus. The average attendance of the public at the Technological Museums during the last five years was well over 200,000.

The National Museum at Melbourne, devoted to Natural History, Geology, and Ethnology, is located in the Public Library building. There are no particulars available in regard to the number of visitors to the institution. The expenditure by the Government on the Museum amounted in 1905 to £2755, and in 1906 to £3540. The Industrial and Technological Museum, opened in 1870, contains upwards of 55,000 specimens. There is a fine "Museum of Botany and Plant Products" in the Melbourne Botanic Gardens. Well-equipped museums of mining and geological specimens are established in connection with the Schools of Mines in the chief mining districts.

The Queensland Museum dates from the year 1871, but the present building was opened in January, 1901. Since its inauguration the Government has expended on the institution a sum of £66,316, of which buildings absorbed £16,563, purchases £21,018, and salaries £28,732. The number of visitors during the year was 59,292, of whom 22,752 visited the institution on Sundays. The Queensland Geological Survey Museum has branches in Townsville, opened in 1886, and Brisbane, opened in 1892. The visitors during the year numbered 17,080. The total expenditure on the institution up to the end of 1906 was £5377, of which £2817 was absorbed by buildings.

Under the Public Library Act of 1884 the South Australian Institute ceased to exist, and the books contained therein were divided amongst the Museum, Public Library and Art Gallery of South Australia, and the Adelaide Circulating Library. The Museum was attended by 106,930 visitors in 1905.

The latest available returns shew that the Western Australian Museum contains altogether 48,000 specimens of an estimated value of £46,000. The Museum is housed in the same building as the Art Gallery, and the visitors to the combined institutions during the year numbered 66,000. The expenditure totalled £3963, of which salaries absorbed £1733, purchase of works of art £682, and scientific objects £520.

There are two museums in Tasmania—the Tasmanian Museum at Hobart, and the Victoria Museum and Art Gallery at Launceston, both of which contain valuable collections of botanical and mineral products. Particulars regarding attendances are not available. The Tasmanian Museum received aid from the Government during last year to the extent of £550.

4. **Art Galleries.**—Information regarding the State collections of objects of art in the various capitals is in some cases very meagre, while the method of presentation does not admit of any detailed comparisons being made. The collection in the National Art Gallery of New South Wales is valued at the present time at £130,000. The average attendance on week-days during the last ten years was about 540, and on Sundays about 1800. During the last few years the expenditure on the institution has averaged about £4000. The collection in the gallery at the end of 1906 comprised 350 oil paintings, 255 water-colour drawings, 500 black and white works, 148 statuary, casts and bronzes, and 300 various art works in metals, ivory, ceramics, glass, mosaic, &c.

The National Gallery at Melbourne at the end of 1906 contained 499 oil paintings, 3511 objects of statuary, and 13,711 water-colour drawings, engravings, and photographs.

The Queensland National Art Gallery contained at the latest available date 62 pictures, 6 pieces of statuary, 113 engravings, 37 illustrated volumes, 27 specimens of ceramic art. During 1906 the institution was visited by 40,000 persons.

The Art Gallery at Adelaide contained in 1906 187 oil paintings, 101 water-colours, 21 pieces of statuary, 188 sketches, engravings, and etchings, and 436 specimens of ceramic ware, art metal, and other art works. The total number of visitors during the year was 131,237. Government aid to the extent of £6395 was granted to the Library, Museum, and Art Gallery during 1905-6.

The Western Australian Art Gallery receives an annual grant from Government of £1000. The latest returns shew that the institution contains 61 oil paintings, 19 water-colours, 168 black and white, and 103 pieces of statuary, in addition to a fair collection of ceramic and art metal-work specimens.

In Tasmania the cities of Hobart and Launceston have Art Galleries, each with a small but very creditable collection.

5. **State Expenditure on all Forms of Educational Effort.**—The expenditure from the consolidated revenue in each State on all forms of educational and scientific activity during each of the last six financial years was as follows:—

EXPENDITURE ON EDUCATION, SCIENCE, AND ART, 1901 TO 1906.

State.	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.
	£	£	£	£	£	£
New South Wales	874,977	905,439	908,229	916,046	934,634	941,654
Victoria ...	864,295	782,049	764,967	787,836	810,850	842,071
Queensland ...	343,870	317,916	319,799	324,502	338,426	366,635
South Australia ...	210.441	203,305	191,929	195,648	199,628	193,346
Western Australia	168,770	200,204	209,573	214,733	230,573	217,036
Tasmania ...	60,759	73,300	72,129	72,435	68,163	68,777
Commonwealth	2,523,112	2,482,213	2,466,626	2,511,200	2,582,274	2,629,519

The expenditure for 1906-7 is equivalent to about 12s. 9d. per head of population in the Commonwealth.

SECTION XXIII.

PUBLIC JUSTICE.

§ 1. Police.

1. **Introductory.**—It was originally intended to give some account in this chapter of the origin and development of the police forces of Australasia, and most of the officers administering the police departments in the various States and New Zealand very kindly supplied the necessary materials. Limitations of space, however, preclude the possibility of publishing "*in extenso*" the valuable store of information thus acquired, but it is hoped to be able to embody it in a later Year Book, or in a still more comprehensive publication.

The following brief notes refer to the evolution of the force in Australia up to the passing of the Police Act of 1862 (25 Vic. No. 16) in New South Wales:—

The first Act of Parliament specially mentioning the establishment of a police force in Australia was passed in 1833 (4 Wm. IV. No. 7), the settlement from 1788 to that year having been under military rule. The Act provided for the appointment of two or more magistrates for the town and port of Sydney, empowered to select a certain number of suitable men for a police force. This force was at first restricted to the capital and its environs, but in 1838 a further Act was passed (2 Vic. No. 2) providing for the establishment and control of police in the chief country districts. About nine years later the prevalence of cases of horse and cattle stealing led to the formation of mounted patrols along the Great Western, Southern, and Northern roads, a central detachment being located in Sydney. The mounted police consisted principally of old soldiers. With the discovery of the goldfields in the early fifties, another branch of the force known as "gold police," also chiefly old soldiers, was established, and the various divisions were commanded by military officers styled "gold commissioners." While a large number of the members of the early force were actuated with the desire to carry out their duties honestly and efficiently, there were others who were totally unfitted for the service, and the general lack of cohesion and co-operation was reflected in the high criminal returns. A complete reorganisation was, however, effected by the Police Act of 1862 (25 Vic. No. 16), which placed the entire control in the hands of an inspector-general, who, through the Chief Secretary, was made responsible to Parliament for the general efficiency of the system.

At the present time the police forces of Australasia may be said to be satisfactory both in regard to physique and general intelligence.

2. **Strength of Police Force.**—The strength of the police force in each State and New Zealand during the six years ended 1906 was as follows:—

POLICE FORCES, 1901 TO 1906.

State.	Area of State in Sq. Miles.	1901.	1902.	1903.	1904.	1905.	1906.
New South Wales	310,372	2,172	2,222	2,270	2,310	2,342	2,413
Victoria ...	87,884	1,466	1,515	1,495	1,495	1,495	1,518
Queensland ...	670,500	1,010	962	949	888	911	952
South Australia ...	903,690	406	412	411	414	420	422
Western Australia	975,920	519	512	500	491	492	507
Tasmania ...	26,215	255	245	235	234	234	229
Commonwealth	2,974,581	5,828	5,868	5,860	5,832	5,894	6,041
New Zealand...	104,751	597	605	630	650	656	699

(i.) *Average Number of Inhabitants to each Police Officer.* The average number of inhabitants to each officer in each State during the same period is shewn below. In considering these figures allowance must, of course, be made for the unequal area and unequal distribution of the population of the various States:—

INHABITANTS TO EACH POLICE OFFICER, 1901 TO 1906.

State.	No. of Persons per Sq. Mile, 1901 Census.	Inhabitants to each Police Officer.					
		1901.	1902.	1903.	1904.	1905.	1906.
New South Wales	4.37	633	632	629	631	637	633
Victoria ...	13.67	826	800	809	810	815	812
Queensland ...	0.74	501	531	543	587	580	562
South Australia ...	0.40	901	890	897	900	900	910
Western Australia	0.19	374	417	454	493	518	516
Tasmania ..	6.58	684	724	764	770	774	787
Commonwealth	1.27	657	662	671	683	688	682
New Zealand...	7.38	1,319	1,335	1,321	1,319	1,345	1,300

The above figures naturally shew a great disparity in the relative numbers of the population protected by each police officer in the various States, and also in the relative area of territory to each officer. Western Australia and South Australia exhibit the largest figures in the latter respect, this, of course, being due to the fact that extensive areas in each State are as yet unpeopled by white settlers.

3. **Duties of the Police.**—In addition to the ordinary employment attaching to their office, the police are called upon to perform many duties which in other countries are carried out by other functionaries. As far as the Statistician is concerned, it is found that the expert local knowledge possessed by the police renders their services in the collection of such returns as those relating to the agricultural, pastoral, and manufacturing industries, private schools, etc., more than ordinarily valuable. Then, again, the fact that their services are enlisted by such widely different departments as those dealing with mines, stock, agriculture, elections, registrations of births, deaths, and marriages, forestry, fisheries, explosives, old-age pensions, lunacy, public works, labour, etc., greatly enhances their general alertness by widening the range of their experience. Occasionally the objection is heard in some quarters that these special tasks involve some degree of sacrifice of ordinary routine duties, but that the general intelligence of the Australian police is adequate to the obligation to perform these tasks, besides being most creditable, results in a great saving of the public money.

4. **Cost of Police Forces.**—The expenditure from Consolidated Revenue on the police forces in each State and New Zealand during the six years 1901 to 1906 is shewn in the following table. Cost of buildings has been excluded from the return:—

COST OF POLICE FORCES, 1901 TO 1906.

State.	1901.	1902.	1903.	1904.	1905.	1906.
	£	£	£	£	£	£
New South Wales	383,332	401,269	416,542	428,374	435,577	434,934
Victoria ...	287,630	293,998	311,693	311,927	313,649	312,941
Queensland ...	183,143	184,878	172,913	161,510	159,464	176,086
South Australia...	83,697	84,874	84,109	85,090	82,419	85,016
Western Australia	119,310	123,924	130,312	128,628	126,661	126,276
Tasmania ...	38,412	39,222	37,833	36,720	36,537	35,086
Commonwealth...	1,095,524	1,128,160	1,153,402	1,152,249	1,154,307	1,170,339
New Zealand ...	117,744	120,629	123,804	126,149	130,426	135,253

The figures for Victoria include the sums paid each year to make up the deficiency in the Police Superannuation Fund. The cost per head of the population in each State and New Zealand for the same period was as follows:—

COST OF POLICE PER INHABITANT, 1901 TO 1906.

State.	1901.	1902.	1903.	1904.	1905.	1906.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
New South Wales	5 7	5 9	5 11	5 11	5 11	5 9
Victoria	4 9	4 10	5 2	5 2	5 2	5 1
Queensland	7 4	7 3	6 9	6 3	6 1	6 7
South Australia	4 7	4 8	4 7	4 7	4 5	4 6
Western Australia	12 8	12 0	11 9	10 11	10 1	9 9
Tasmania	4 6	4 6	4 3	4 1	4 1	3 11
Commonwealth	5 9	5 10	5 11	5 10	5 9	5 9
New Zealand	3 0	3 0	3 0	3 0	3 0	3 0

The relatively high cost per head in Queensland and Western Australia is due to the fact that there are in those States extensive areas of sparsely settled country, in which mounted patrols have to be maintained.

§ 2. Lower (Magistrates') Courts.

1. **Introductory.**—In considering the criminal returns of the various States due allowance must be made on account of several factors, for example, the relative powers of the courts, both lower and higher, etc. In the case of lower courts, the actual number of laws in each State, the breach of which renders a person liable to fine or imprisonment, must be taken into account. Again, the attitude of the magistracy and police towards certain classes of offences is a factor, for in the case of liquor laws, or laws connected with vagrancy or gaming, the views of magistrates, and instructions issued to the police, may be responsible for considerable variations in the returns. The strength and distribution of the police forces and the age constitution and distribution of the State's population also influence the results.

2. **Powers of the Magistrates.**—In New South Wales there is no general limit to the powers of the magistrates in regard to offences punished summarily, their authority

depending in each case on the statute which creates the offence and gives them jurisdiction. Except in the case of a very few statutes, and excluding cumulative sentences, the power of sentence is limited to six months. Imprisonment in default of payment of fine is regulated by a scale limiting the maximum period according to the sum ordered to be paid, but in no case exceeding twelve months. Actions for debt and damage within certain limits also come within magisterial jurisdiction. In cases of debts, liquidated or unliquidated, the amount recoverable is not exceeding £50 before a court constituted of a stipendiary or police magistrate at certain authorised places, and not exceeding £30 at any other place before a court constituted of a stipendiary or police magistrate or two or more justices of the peace. The amount in actions of damage is limited to £10, but may extend to £30 by consent of parties.

In Victoria the civil jurisdiction of magistrates is restricted to what may be designated ordinary debts, damages for assault, restitution of goods, etc., where the amount in dispute does not exceed £50. No definite limit is fixed to the powers of the magistrates on the criminal side, and for some offences sentences up to two years may be imposed. The proportion of long sentences is, however, comparatively small, the total punishments of one year and upwards in 1906 comprising only eighty-six out of 16,463 sentenced.

In Queensland, generally speaking, the maximum term of imprisonment which justices can inflict is six months, but in certain exceptional cases, such as offences against sections 233 and 445 of the criminal code (betting-houses and illegally using animals), sentences of twelve months may be imposed. No limit exists as to the extent to which cumulative sentences may be applied, but in practice the term is never very lengthy.

In South Australia, under the Minor Offences Act, magistrates can impose sentences up to six months, and under the Summary Convictions Act up to three months. The Police Act of 1869 gives power to sentence up to one year, with hard labour, in the case of incorrigible rogues, while under the Quarantine Act of 1877, and the Lottery and Gaming Act of 1875, sentences of two years may be imposed.

Under the Petty Sessions Act of 1867, in Tasmania, any person charged with having committed, or with having aided or abetted in the commission of an offence in regard to property of a value not exceeding £10, may, on conviction, for a first offence, before two or more justices in Petty Sessions, be imprisoned for any term not exceeding one year, and for a term not exceeding two years for a second or subsequent offence.

3. **Persons Charged at Magistrates' Courts.**— The total number of persons who were charged before magistrates in each State and New Zealand is given below for the six years 1901 to 1906:—

PERSONS CHARGED BEFORE MAGISTRATES, 1901 TO 1906.

State.	1901.	1902.	1903.	1904.	1905.	1906.
New South Wales	58,681	60,373	61,394	59,851	61,127	63,035
Victoria ...	50,169	45,198	46,682	47,736	46,069	49,061
Queensland ...	23,920	21,115	19,012	18,132	17,943	18,849
South Australia ...	6,134	6,488	6,430	6,015	5,974	6,324
Western Australia	14,812	15,929	16,362	14,940	14,646	14,478
Tasmania ...	5.499	6.171	5.975	5,579	7.090	6,391
Commonwealth ...	159,215	155,274	155,855	152,253	152,849	158,138
New Zealand ...	25,825	28,076	30,753	30,934	30,741	32,866

The above figures include, of course, a number of people who were wrongly charged and statistically are not of great importance. The actual number of convictions in connection with the persons who appeared before the lower courts in each year of the period

1901 to 1906 is, therefore, also given. A separate line is added shewing the committals to higher courts, the statistical purpose of which is obvious:—

CONVICTIONS AND COMMITTALS AT MAGISTRATES' COURTS, 1901 TO 1906.

State.		1901.	1902	1903.	1904.	1905.	1906.
New South Wales	Convictions	48,962	50.776	51.379	50.102	51,638	53,115
	Committals	1,262	1,271	1,419	1.551	1,454	1,286
Victoria ...	Convictions	36.905	33.461	36,031	35.854	34,134	37,740
	Committals	700	641	631	564	652	584
Queensland ...	Convictions	19,844	17,625	15.795	15,345	14,730	15,987
	Committals	503	489	508	460	495	440
South Australia	Convictions	4,915	5,448	5,126	4,897	4,936	5,249
	Committals	212	209	193	127	152	168
Western Australia	Convictions	10,829	11.536	13,601	12,376	12,246	12,181
	Committals	241	335	316	266	253	182
Tasmania ...	Convictions	4,469	4.949	4,877	4,515	5,932	5,449
	Committals	76	65	79	51	59	55
Commonwealth	Convictions	125,924	123,795	126.809	123.089	123,616	129,721
	Committals	2,994	3,010	3,146	3,019	3,065	2,715
New Zealand ...	Convictions	20,326	22,125	24,765	25,237	24,994	27,128
	Committals	709	765	871	874	832	883

4. **Convictions for Serious Crime.**—While the figures given in the preceding table refer to the entire body of convictions, the fact must not be lost sight of that they include a large proportion of offences of a technical nature, many of them unwittingly committed, against various Acts of Parliaments. Cases of drunkenness and minor breaches of good order which, if they can be said to come within the category of crime at all, at least do so in a very different sense to some other offences, also help to swell the list. The following table has, therefore, been prepared for the purpose of showing the convictions at magistrates' courts for what may be regarded as the more serious offences, *i.e.*, against the person and property, either separately or conjointly, and forgery and offences against the currency:—

CONVICTIONS FOR SERIOUS CRIME AT MAGISTRATES' COURTS, 1901 TO 1906.

State.	1901.	1902.	1903.	1904.	1905.	1906.
New South Wales	4,649	5,187	5,277	4,744	4,640	4,137
Victoria ...	*2,066	3,105	3,052	2.551	2,944	2,879
Queensland ...	2,314	2,446	2,045	2,065	2.175	2,035
South Australia ...	576	611	623	470	441	437
Western Australia	818	964	958	1,075	1,256	1,215
Tasmania ...	604	536	508	563	660	522
Commonwealth ...	11,027	12,849	12,463	11,468	12,116	11,225
New Zealand ...	2,514	2,298	2,411	2,467	2,547	2,684

* Arrests only. Summons cases not available.

Compared with the population the above figures give the following results per 10,000 inhabitants:—

CONVICTIONS PER 10,000 INHABITANTS, 1901 TO 1906.

State.	1901.	1902.	1903.	1904.	1905.	1906.
New South Wales	34.1	37.3	37.3	32.9	31.5	27.3
Victoria ...	17.2	25.7	25.3	21.1	24.3	23.5
Queensland ...	46.2	48.0	39.9	39.8	41.4	38.2
South Australia ...	15.9	16.8	17.0	12.7	11.8	11.5
Western Australia	43.4	46.8	43.3	45.4	50.2	46.7
Tasmania ...	35.0	30.8	26.6	31.5	36.5	29.2
Commonwealth ...	29.1	33.3	31.9	29.0	30.1	27.5
New Zealand ...	32.3	28.8	29.4	29.2	29.3	30.0

5. **Decrease in Crime.**—The figures quoted in the preceding table show that there has been a considerable decrease in crime during the last six years, while if the comparison be carried back to 1881 the position is seen to be still more satisfactory. The rate of convictions at magistrates' courts per 10,000 of the population is given below for each of the years 1881, 1891, 1901, and 1906. Only the more serious offences, particularised in the preceding section, have been taken into consideration:—

RATE OF CONVICTIONS FOR SERIOUS CRIME IN THE COMMONWEALTH.

Year.	Convictions per 10,000 Persons.
1881	69.3
1891	44.8
1901	29.1
1906	27.5

6. **Need of Statistic of Distinct Persons.**—The figures already quoted refer to total convictions, and in respect of individuals necessarily involve a considerable amount of duplication, especially in minor offences, such as drunkenness, petty larcenies, etc., in which the same offender appears before the court many times in the course of the year. In a few of the States it is possible to obtain the number of distinct persons arrested, but there are no means of arriving at the total distinct persons convicted before the magistrates in any State. The forms submitted to and adopted by the Conference of Statisticians in 1906 provide for information as to separate persons convicted, irrespective of whether they were arrested or summoned, and thus the statistical tabulations will, it is hoped, possess in future greater value for the purpose of comparisons.

7. **Causes of Decrease in Crime.**—The statistics given shew that there has been a considerable decrease in crime throughout Australasia. The results so far quoted are restricted entirely to the lower or magistrates' courts. There has also been a gratifying decrease in regard to offences tried at the higher courts, as will be seen later.

Attempts have been made to account for this decline: *e.g.*, advance in education, enlightened pœnological methods, etc. Much depends upon what is meant by education. Many classed in census statistics as "educated" can barely read and write. In this connection, moreover, it ought not to be forgotten that collaterally with the introduction of ordinary intellectual education certain people have departed from their pristine virtues.

The deterrent effect of punishment, in respect of many offences, notably drunkenness, vagrancy, petty larcenies, etc., appears to be almost negligible. In general, punishment has declined in brutality and severity, and has improved in respect of being based to a greater extent upon a scientific pœnological system, though in this latter respect there is yet much to be desired. Recent advances in pœnological methods will be referred to in a subsequent section. Here it will be sufficient to remark that under the old régime, a prisoner on completion of a sentence in gaol was simply turned adrift on society, and in many cases sought his criminal friends, and speedily qualified for readmission to the penitentiary. Frequently he was goaded to this by mistaken zeal on the part of the police, who took pains to inform employers of the fact of a man having served a sentence in gaol. For a long time any assistance to discharged prisoners was in the hands of private organisations such as the Salvation Army Prison Gate Brigade, but in some of the States, and notably in New South Wales, the authorities themselves look after the welfare of discharged prisoners in the way of finding work, providing tools, etc.

Improvements in the means of communication and identification have been responsible for some of the falling-off noticeable in the criminal returns, the introduction of the Bertillon system having contributed to certainty of identification. Part of the improvement may no doubt be referred also to the general amelioration in social condition that has taken place during the last fifty years.

8. **Drunkenness.**—The number of cases of drunkenness and the convictions recorded in connection therewith during the period 1901 to 1906 will be found in the following table:—

CASES AND CONVICTIONS.—DRUNKENNESS.

State.	1901.		1902.		1903.		1904.		1905.		1906.	
	Cases.	Convictions.	Cases.	Convictions.	Cases.	Convictions.	Cases.	Convictions.	Cases.	Convictions.	Cases.	Convictions.
New South Wales	23,921	23,803	24.437	24,332	24,703	24,598	23,069	22,943	24,185	24,003	22,568	22,422
Victoria	*17,360	10,846	14,540	9,394	12,630	8,494	13,881	9,281	14,458	9,860	14,029	9,529
Queensland ...	9,791	9,773	8,123	8,102	7,190	7,131	6,854	6,827	6,633	6,592	7,493	7,473
South Australia ...	2,049	2,011	2,431	2,394	2,340	2,296	2,387	2,352	2,362	2,332	2,483	2,460
Western Australia	3,348	3,237	3,347	3,283	3,572	3,513	3,597	3,531	3,509	3,425	3,588	3,505
Tasmania ...	743	705	636	514	526	511	580	556	539	528	459	454
Commonwealth ...	57,212	50,375	53,514	48,019	50,961	46,543	50,368	45,490	51,641	46,240	50,620	45,843
New Zealand ...	9,622	9,806	9,922	9,582	10,721	10,408	11,587	11,275	11,018	10,699	11,976	11,629

* Arrests only. Summons cases not available.

The number of convictions is, as might naturally be expected, almost identical with the number of cases. Victoria, however, is an exception, but in this State it is explained that offenders are generally discharged on a first appearance, and no conviction is recorded, a similar procedure being also adopted in the case of those arrested on Saturday and detained in custody till Monday. The logic of excluding these cases from the list of convictions is certainly open to doubt.

The convictions of drunkenness per 100,000 of the population during each of the years from 1901 to 1906 are given hereunder:—

CONVICTIONS FOR DRUNKENNESS PER 100,000 INHABITANTS.

State.	1901.	1902.	1903.	1904.	1905.	1906.
New South Wales	174.6	174.9	173.8	159.1	162.8	148.5
Victoria ...	90.1	77.6	70.3	76.9	77.2	77.9
Queensland ...	195.0	159.0	139.1	131.5	125.4	140.3
South Australia ...	55.4	65.7	62.8	63.6	62.2	64.7
Western Australia	171.8	159.5	158.7	149.3	136.8	134.8
Tasmania ...	41.0	29.6	28.8	31.1	29.5	25.4
Commonwealth ...	133.4	124.5	119.3	115.1	115.1	112.2
New Zealand ...	119.6	120.1	126.9	133.4	123.0	129.8

The convictions for drunkenness taken by themselves are not an altogether satisfactory test of the relative sobriety of the inhabitants of each State, forasmuch as several important factors must be taken into consideration. The age constitution, for example, of the people is by no means identical in each State, Western Australia having by far the largest proportion of adult males. The avocations of the people affect the result, since persons engaged in strenuous callings are, on the whole, more likely to indulge in alcoholic stimulants than those employed in less arduous ones. The distribution of the population is also a factor, it being obvious that the likelihood of arrest or summons for drunkenness is greater in the more densely populated regions, and lastly, so also is the attitude of the police and public generally in regard to the offence.

It is not unusual to supplement statistics of drunkenness by furnishing also the relative consumption of alcoholic beverages. Deductions drawn therefrom will be very misleading if they fail to take into account also the consumption of non-intoxicating beverages such as tea and coffee and the general habit of the people. Throughout the greater part of Europe tea and coffee are consumed but sparingly, while Australia, as is well known, is one of the greatest tea-drinking countries of the world.

The following table shewing the consumption of spirits, wine, and beer per head of the population has been compiled from returns prepared by the British Board of Trade. The figures in most cases represent the average for the five years 1901 to 1905:—

CONSUMPTION OF ALCOHOLIC BEVERAGES IN VARIOUS COUNTRIES.

1901 TO 1905.

Country.	Consumption per Head of Population.			Country.	Consumption per Head of Population.		
	Spirits.	Wine.	Beer.		Spirits.	Wine.	Beer.
	Imp. Galls.	Imp. Galls.	Imp. Galls.		Imp. Galls.	Imp. Galls.	Imp. Galls.
United Kingdom...	0.996	0.321	29.454	Cape of Good Hope	0.799	2.587	1.725
				Canada ...	0.857	0.094	5.012
New South Wales	0.831	0.684	9.770	Russia... ...	0.944	...	0.977
Victoria ...	0.699	1.290	13.353	Norway ...	0.622	...	3.445
Queensland ...	1.098	0.284	10.357	Sweden ...	1.464	...	12.601
South Australia ...	0.457	5.434	8.390	Denmark ...	2.543	...	20.577
Western Australia	1.468	1.002	24.517	German Empire	1.545	1.455	26.249
Tasmania ...	0.535	0.169	9.218	Holland ...	1.500	0.372	...
				Belgium ...	1.063	1.018	47.748
Commonwealth	0.888	1.285	11.876	France ...	1.354	30.670	7.919
				Switzerland ...	0.971	13.650	13.884
New Zealand ...	0.751	0.147	9.357	Italy	0.254	25.044	0.141

9. **Treatment of Drunkenness as Crime.**—Though the problem of the correct method of dealing with dipsomania is by no means an easy one, it seems fairly clear that the present plan of bringing offenders before magistrates, and subjecting them to the penalty of imprisonment or fine, has little deterrent effect, as the same offenders are constantly reappearing before the courts. Further, the casting of an inebriate into prison, and placing him in his weakened mental state in the company of professional malefactors, doubtless tends to swell the ranks of criminals and certainly tends to lower his self-respect, and examination of the prison records in New South Wales some years ago disclosed the fact that over 40 per cent. of the gaol population had commenced their criminal career with a charge of drunkenness. During the last few years the dangers of moral contamination in this way have been more accurately appreciated, and a system of classification of prisoners has been adopted whereby the petty offender is kept from association with the more evil-disposed. With regard to drunkards, however, Captain Neitenstein, the Comptroller of Prisons in New South Wales, advocates the entire abandonment of the system of repeated fine or imprisonment in favour of a course of hospital treatment.

10. **Treatment of Habitual Offenders.**—In New South Wales the Habitual Criminals Act of 1905 gives judges the power of declaring a prisoner, after a certain number of sentences, to be an habitual criminal, and as such to be detained until, in the opinion of the authorities, he is fit to be at large. Similar enactments were passed in Victoria and New Zealand during the last two years. Naturally it will be some time before the effect of the measures on the prevalence of crime can be estimated.

11. **Treatment of First Offenders.**—In all the States and New Zealand statutes dealing with first offenders have been in force for some years, the dates of passing the Acts being as follows:—New South Wales, 1894; Victoria, 1890; Queensland and South Australia, 1887; Western Australia, 1892; Tasmania and New Zealand, 1886. The method of procedure is practically the same in all cases, i.e., with regard to most first offenders the magistrate or judge is empowered to allow the offender to go free on recognisances being entered into for his good behaviour for a certain period. In practice this humane law has been found to work excellently, very few of those to whom its provisions have been extended having been found to relapse into crime.

12. **Children's Courts.**—Special courts for the trial of juvenile offenders have been established in New South Wales, Victoria, and New Zealand within the last few years, while children's courts, although not under that name, are practically provided for by the State Children's Acts of 1895 and 1900 in South Australia. The object of these courts is to avoid, as far as possible, the unpleasant surroundings of the ordinary police court.

13. **Committals to Superior Courts.**—In a previous section it has been pointed out that comparisons of criminality based on a consideration of the total returns from magistrates' courts are somewhat inadequate, seeing that the figures include numbers of cases which are merely technical breaches of laws having in some instances a purely local significance. The committals to higher courts give a better basis of comparison, although even in this connection allowance must be made for the want of uniformity in jurisdiction. The table below gives the number of committals in each year from 1901 to 1906, with the proportion of such committals per 10,000 of the population. The rates are shewn on a separate line:—

COMMITTALS TO SUPERIOR COURTS, 1901 TO 1906.

State.		1901.	1902.	1903.	1904.	1905.	1906.
New South Wales ...	No.	1,287	1,296	1,437	1,587	1,486	1,334
	Rate	9.4	9.3	10.2	11.0	10.1	8.8
Victoria	No.	700	641	631	564	652	584
	Rate	5.8	5.3	5.2	4.7	5.4	4.8
Queensland	No.	503	489	508	460	495	440
	Rate	10.0	9.6	9.9	8.9	9.4	8.3
South Australia ...	No.	212	209	193	127	152	168
	Rate	5.8	5.7	5.3	3.4	4.1	4.4
Western Australia ...	No.	241	335	317	266	235	182
	Rate	12.8	16.3	14.3	11.2	9.4	7.0
Tasmania	No.	76	65	79	51	59	55
	Rate	4.4	3.7	4.5	2.9	3.3	3.1
Commonwealth ...	No.	3,019	3,035	3,165	3,055	3,079	2,763
	Rate	8.0	7.9	8.1	7.7	7.7	6.8
New Zealand ...	No.	709	765	871	874	860	888
	Rate	9.1	9.6	10.6	10.8	9.9	9.9

The above figures shew that there has been a decrease in serious crime, and, if the comparison is carried farther back, it will be found that the improvement has been considerable. This will be evident from an examination of the following figures, which shew the rate of committals per 10,000 persons in Australia at various periods since 1861:—

RATE OF COMMITTALS IN AUSTRALIA, 1861 TO 1906.

Year	1861.	1871.	1881.	1891.	1901.	1906.
Committals per 10,000 inhabitants ...	22	14	12	11	8	7

The decline in proportion to population since 1861 has been 68 per cent.

§ 3. Superior Courts.

1. **Convictions at Superior Courts.**—The total number of convictions at superior courts, together with the rate per 10,000 of the population, is shewn below for each of the years 1901 to 1906:—

CONVICTIONS AT SUPERIOR COURTS, 1901 TO 1906.

State.		1901.	1902.	1903.	1904.	1905.	1906.
New South Wales ...	No.	730	775	896	890	819	707
	Rate	5.4	5.6	6.3	6.2	5.6	4.7
Victoria	No.	393	381	371	338	382	339
	Rate	3.3	3.1	3.1	2.8	3.2	2.8
Queensland	No.	281	249	269	242	288	249
	Rate	5.6	4.9	5.2	4.7	5.5	4.7
South Australia ...	No.	134	100	130	127	98	112
	Rate	3.7	2.7	3.6	3.4	2.6	2.9
Western Australia ...	No.	151	132	191	182	161	150
	Rate	8.0	6.4	8.6	7.7	6.4	5.8
Tasmania	No.	39	28	51	26	24	32
	Rate	2.3	1.6	2.9	1.5	1.3	1.8
Commonwealth ...	No.	1,728	1,665	1,908	1,805	1,772	1,589
	Rate	4.6	4.3	4.9	4.6	4.4	3.9
New Zealand... ...	No.	328	312	308	264	272	240
	Rate	4.2	3.9	3.8	3.1	3.1	2.7

In considering the above figures allowance must be made for the various factors enumerated in a preceding section. Only when this is done will the comparatively unenviable pre-eminence of Western Australia in regard to serious crime be explained. Tasmania, it will be noted, shews by far the smallest proportion of serious crime, while a reference to a preceding table discloses the fact that the island State is relatively the smallest consumer of alcoholic beverages. That a definite causal relation exists between the figures shewn by the respective tables is not, however, obvious.

2. **Offences for which Convictions were Recorded at Superior Courts.**—In the following table will be found a classification of the principal offences for which persons were convicted at the higher courts during each year of the period 1901 to 1906. Owing to lack of uniformity in the presentation of the returns for the several States the infor-

mation is confined to the chief offences against the person only. The figures quoted refer to convictions in the Commonwealth during the period dealt with:—

CONVICTIONS FOR SERIOUS CRIME, SUPERIOR COURTS, 1901 TO 1906.

Offences.	1901.	1902.	1903.	1904.	1905.	1906.
Murder and attempts at ...	24	31	32	34	32	35
Manslaughter	21	16	19	24	14	21
Rape and crimes of lust ...	113	92	90	97	96	70
Other offences against the person	274	243	244	225	256	239

While there has been no diminution in the convictions for murder and manslaughter there has been a considerable falling off in the case of crimes of lust. The general total of convictions for all offences against the person shews a decline since 1901 of about 16 per cent.

3. **Capital Punishment.**—The table below gives the number of executions in each State and New Zealand during the period 1901 to 1906:—

EXECUTIONS, 1901 TO 1906.

State.	1901.	1902.	1903.	1904.	1905.	1906.
New South Wales	3	...	3	1	...	1
Victoria	...	2	...	1	...	...
Queensland	5	...	2	...	2	3
South Australia	...	...	...	1	1	1
Western Australia	...	...	...	...	3	1
Tasmania	...	...	...	...	...	...
Commonwealth ...	8	2	5	3	6	6
New Zealand ...	1	...	...	...	1	...

In the early days of the history of Australia the penalty of death was attached to a large number of offences, many of which at the present time would be dealt with in the lower or magistrates' courts. With the growth of settlement, and the general amelioration in social and moral conditions, the list was, however, considerably curtailed, and the existing tendency is practically to restrict death sentences to cases of murder. It may be remarked that in cases of rape, which is a capital offence in the Australian States, the penalty has been but sparingly inflicted during the last few years. Juries are reputed to be loth to convict on this charge, owing to the uncertainty whether sentence of death will be pronounced.

During the period 1861 to 1880 the average number of executions in the Commonwealth was nine, from 1881 to 1900 the average was six, while for the period 1901 to 1906 the figure stood at five.

§ 4. Prisons.

1. **Prison Accommodation and Prisoners in Gaol.**—The table below shews the number of prisons in each State and the accommodation therein at the end of 1906:—

PRISONS AND PRISON ACCOMMODATION, 1906.

State.	Number of Prisons.	Accommodation in—		Greatest No. in Confinement during Year.	Prisoners at End of Year.
		Separate Cells.	Wards.		
New South Wales	53	2,246	113	1,730	1,519
Victoria	16	1,515	983	1,251	927
Queensland	12	559	416	*	507
South Australia	7	716	358	358	237
Western Australia	25	500	224	*	402
Tasmania	2	252	276	123	89
Commonwealth	115	5,788	2,370	...	3,681
New Zealand	41	788	446	*	891

* No information.

The number of prisoners in gaol, exclusive of debtors, at the 31st December in each of the years 1901 to 1906, is given below for the Commonwealth States and New Zealand. A separate line is added in each instance shewing the proportion per 10,000 of the population:—

PRISONERS IN GAOLS, 1901 TO 1906.

State.		1901.	1902.	1903.	1904.	1905.	1906.
New South Wales	Number	1,812	1,835	1,816	1,877	1,678	1,519
	Proportion	13.3	13.2	12.8	13.0	11.4	10.1
Victoria ...	Number	1,150	1,071	978	1,062	990	927
	Proportion	9.6	8.8	8.1	8.8	8.2	7.6
Queensland ...	Number	574	547	508	561	535	507
	Proportion	11.5	10.7	9.9	10.8	10.2	9.5
South Australia...	Number	238	274	261	267	259	237
	Proportion	6.6	7.5	7.1	7.2	6.9	6.2
Western Australia	Number	360	397	512	475	465	402
	Proportion	19.1	19.3	23.1	20.1	18.6	15.5
Tasmania ...	Number	117	80	110	103	92	89
	Proportion	6.8	4.6	6.2	5.8	5.1	5.0
Commonwealth...	Number	4,251	4,204	4,185	4,345	4,019	3,681
	Proportion	11.2	10.9	10.7	11.0	10.0	9.0
New Zealand ...	Number	712	653	739	750	809	891
	Proportion	9.2	8.2	9.0	8.9	9.3	9.9

From the preceding table it will be seen that the proportion to population of prisoners in gaol has fallen considerably during the last six years, while, if the comparison be carried further back, the position is seen to be still more favourable, the prisoners in gaol in the Commonwealth numbering as much as sixteen per 10,000 of the population in 1891.

2. **Improvement in Pœnological Methods.**—During recent years Australia and New Zealand, in common with most other civilised countries, have introduced considerable modifications and improvements in methods of prison management. Under the old régime punishment partook more or less of the character of reprisals for wrongdoing, and the idea of constituting the prison as a reformative agency was in the background. But of recent years there has been an earnest attempt at effecting a moral reformation in the unfortunates who lapse into crime. This aspect of prison management has been specially prominent in New South Wales. As pointed out by the Comptroller-General of Prisons of that State, there are, however, certain directions in which improvements can be made. The danger and absurdity of sending drunkards to gaol has already been alluded to in a previous section, while present methods of dealing with vagrancy, and particularly with prostitution, have proved quite inadequate.

The general reorganisation of the New South Wales prison system may be said to date from the year 1896. Briefly stated, the chief reforms which have been introduced are as follow:—(*a*) Prevention of contamination consequent on evil association by the adoption of the "restricted association" scheme, under which prisoners are allowed to have as little intercourse with each other as possible, each prisoner having a separate cell, and mingling with other prisoners only at exercise or at work, and then under close supervision. (*b*) Careful classification of prisoners to avoid contact of minor or first offenders with the more hardened. (*c*) Better prison fare. (*d*) Abolition of solitary confinement in dark cells. (*e*) Lighting cells up to a reasonable hour at night and allowing well-conducted prisoners the privilege of reading interesting books. (*f*) Abolition of the practice of sending young children to gaol. (*g*) Attempt at scientific treatment of the habitual offender. (*h*) Provision for helping prisoners on leaving gaol to find work through the agency of the Discharged Prisoners' Aid Society.

In 1902 the system of finger-print identification of criminals was introduced, and by the year 1903 bureaux had been established in the various States for the exchange of records.

Space will not permit of more than a passing reference to the improvements brought about in prison management in the other States. In Victoria there is an excellent system of classification and allocation of prisoners to different gaols, while at the important penal establishment at Pentridge a careful segregation into no less than five distinct classes is carried out. In common with the other States the latest humane methods of accommodation and prison treatment have for some time been employed.

Queensland prisons have been considerably modernised during the last few years. The prison for females at Brisbane has been built on the radiating plan, and embodies the latest ideas in pœnological methods.

Unusual circumstances have combined to keep crime at a low point in South Australia. In the first place there was never any transportation of criminals to the State, while in the earlier years of its history South Australian lawbreakers were transported elsewhere. The present system was drafted mainly on English and European lines by the late W. R. Boothby, C.M.G., and under his directions and that of his successor has been found to work admirably.

There is no special information available with regard to the prison systems of Western Australia and Tasmania. A novel feature in connection with the prison system of New Zealand was introduced about five years ago. This consisted in the establishment of what are known as prisoners' tree-planting camps. The idea was to utilise prisoners' services in planting trees on Crown lands unfit for cultivation, and the venture has been attended with very successful results. Another innovation, the result of which will be awaited with some curiosity, concerns the treatment of drunkards. The

"Habitual Drunkards Act," passed in 1906, provides that persons who have been convicted for drunkenness three times in one year may on their fourth appearance be committed to some authorised institution and detained there for a period not less than twelve months. A similar enactment has recently been passed by the New South Wales Parliament.

§ 5. Civil Courts.

1. **Lower Courts.**—The transactions of the lower courts on the civil side during each of the last six years are given in the table hereunder. As pointed out previously, the jurisdiction of the courts is by no means uniform in the various States. The figures, however, possess a certain value as indicating that resort to litigation is on the decline in Australasia:—

LOWER COURTS.—CIVIL CASES, 1901 TO 1906.

State.		1901.	1902.	1903.	1904.	1905.	1906.
N.S. Wales	Cases tried No.	19,989	24,629	25,592	23,102	22,497	20,573
	Amt. of judgm't £	*	*	*	*	*	*
Victoria ...	Cases No.	17,646	20,421	22,012	22,046	26,393	25,320
	Amount £	86,199	96,166	107,502	116,757	121,525	123,625
Queensland ...	Cases No.	10,682	10,593	11,058	10,881	10,061	10,311
	Amount £	44,004	41,522	43,242	39,022	36,553	36,408
South Australia...	Cases No.	11,582	12,397	12,190	12,282	11,518	11,844
	Amount £	36,640	37,345	30,173	36,857	30,335	29,123
Western Australia	Cases No.	7,026	7,021	7,198	8,009	8,224	10,109
	Amount £	61,977	47,432	50,112	50,264	53,681	62,556
Tasmania ...	Cases No.	4,023	3,395	2,841	3,535	452	422
	Amount £	21,990	19,087	17,230	19,247	25,106	18,202
Commonwealth	Cases No.	70,948	78,456	80,891	79,855	79,145	78,579
	Amount† £	250,810	241,552	248,259	262,147	267,200	269,914
New Zealand...	Cases No.	19,136	17,027	16,571	19,569	20,161	23,381
	Amount £	175,604	159,133	157,766	179,829	202,923	236,643

* Not available. † Exclusive of New South Wales.

The figures just given represent the returns from Petty Sessions courts in New South Wales and Victoria, the Petty Debts Cases in Queensland, the Local Courts of South Australia and Western Australia, and the Court of Requests in Tasmania.

2. **Superior Courts.**—In the next table will be found the transactions on the civil side in the Superior Courts during each of the years 1901 to 1906:—

The New South Wales returns are to some extent defective, as the figures quoted for amount of judgments include in the case of the Common Law jurisdiction of the Supreme Court the total judgment signed, while in the case of the other States the figures refer to sums actually adjudged after trial. For New South Wales, also, the transactions of district courts refer to the total amounts sued for, and not the sums actually awarded after trial. Statistically the chief importance of the table consists in the fact that it shews a marked decline in litigiousness in Australia.

SUPERIOR COURTS.—CIVIL CASES, 1901 TO 1906.

State.		1901.	1902.	1903.	1904.	1905.	1906.
N.S. Wales	Causes tried No.	1,956	1,603	1,471	1,203	1,118	837
	Amt. of judgm't £	422,738	601,949	407,790	323,312	277,292	266,896
Victoria ...	Causes No.	669	723	706	651	678	620
	Amount £	47,862	58.919	53.139	57.572	51.467	50,194
Queensland ...	Causes No.	145	129	136	129	101	118
	Amount £	14,904	20,025	17,329	17,168	15,245	11,551
South Australia...	Causes No.	17	20	19	26	22	32
	Amount £	3,515	39.998	12,784	9,561	1.229	2,207
Western Australia	Causes No.	501	509	516	621	621	595
	Amount £	77,174	75,376	77,982	92.378	74,431	62,770
Tasmania ...	Causes No.	154	321	159	296	249	136
	Amount £	4,931	9,065	7,082	11,201	9,283	4,083
Commonwealth	Causes No.	3,442	3,305	3,007	2,926	2,789	2,338
	Amount £	571,124	805,332	576,106	511.192	428,947	397,701
New Zealand ...	Causes No.	142	199	236	248	283	313
	Amount £	46,900	24,846	32,146	48,771	50,081	44,955

3. **Divorces and Judicial Separations.**—The number of divorces and judicial separations in each State and New Zealand during the period 1901 to 1906 is shewn below:—

DIVORCES AND JUDICIAL SEPARATIONS. 1901 TO 1906.

State.	1901.		1902.		1903.		1904.		1905.		1906.	
	Divorces.	Judicial Separati'ns.	Divorces.	Judicial Separati'ns.	Divorces.	Judicial Separati'ns.	Divorces.	Judicial Separati'ns.	Divorces.	Judicial Separati'ns.	Divorces.	Judicial Separati'ns.
New South Wales ...	252	20	245	21	206	14	216	8	175	15	174	10
Victoria...	83	...	109	...	101	...	140	1	128	1	119	2
Queensland	14	...	6	...	8	1	13	1	5	1	14	3
South Australia... ...	6	...	2	...	10	...	4	...	6	...	3	1
Western Australia ...	12	1	8	...	10	1	16	...	11	1	18	...
Tasmania	11	...	3	...	3	...	2	...	2	...	5	...
Commonwealth... ...	378	21	373	21	338	16	391	10	327	18	333	16
New Zealand	103	1	91	...	136	3	111	2	126	...	151	1

The average annual number of divorces and judicial separations in the Commonwealth and New Zealand at decennial periods from 1871 to 1900 and for the six years 1901 to 1906 is given hereunder:—

DIVORCES AND JUDICIAL SEPARATIONS. 1871 TO 1906.

	1871-1880.	1881-90.	1891-1900.	1901-6.
Commonwealth	29	70	358	374
New Zealand	...	23	37	138

The bulk of the divorces and judicial separations refer, as the table shews, to New South Wales and Victoria, the Acts of 1892 and 1889 in the respective States making the separation of the marriage tie comparatively easy. In some statistical works it is customary to compare the divorces in any year with the marriages in the same year.

The comparison is, however, quite valueless, as there is no necessary connection between the figures. Some value would attach to a comparison of the number of divorces with the number of married people living, but the latter information cannot be obtained with accuracy except at census periods.

4. **Probates.**—The number of probates and letters of administration granted, together with the value of the estates concerned, is shewn below for each State and New Zealand for the period 1901 to 1906:—

PROBATES AND LETTERS OF ADMINISTRATION, 1901 TO 1906.

State.		1901.	1902.	1903.	1904.	1905.	1906.
New South Wales ...	Number	2,657	2,782	2,767	2,850	2,804	2,862
	Value £	7,083,459	5,807,620	7,179,882	6,156,963	7,714,416	7,592,437
Victoria	Number	3,846	3,976	3,884	3,827	3,853	3,962
	Value £	6,527,235	7,571,482	6,074,077	5,762,064	6,003,478	6,424,738
Queensland	Number	594	627	710	588	584	602
	Value £	1,594,425	1,078,831	2,617,348	1,512,237	1,016,495	1,794,742
South Australia ...	Number	927	913	919	964	902	1,020
	Value £	1,457,376	1,790,102	2,464,011	2,056,612	1,294,968	2,041,280
Western Australia ...	Number	313	347	399	367	406	478
	Value £	615,729	488,057	703,071	422,515	676,920	544,245
Tasmania	Number	229	230	256	295	270	348
	Value £	402,157	299,408	253,107	905,201	504,196	862,222
Commonwealth ...	Number	8,566	8,875	8,935	8,801	8,819	9,275
	Value* £	17,680,881	17,035,500	19,311,556	16,815,615	17,210,478	19,259,664
New Zealand ...	Number	1,457	1,430	1,385	1,437	1,527	1,546
	Value £	2,352,608	2,714,237	3,091,340	3,645,589	3,067,529	3,958,246

The figures naturally shew considerable variations owing to the large differences in the value of property left each year.

5. **Bankruptcies.**—The returns in bankruptcy during each of the last six years are given hereunder:—

BANKRUPTCIES, 1901 TO 1906.

State.		1901.	1902.	1903.	1904.	1905.	1906.
New South Wales	Number	436	458	463	461	421	406
	Liabilities £	207,092	281,204	230,429	440,063	289,210	179,740
	Assets £	103,478	124,427	123,037	252,293	160,123	93,201
Victoria	Number	327	406	505	462	570	517
	Liabilities £	216,198	364,630	210,066	387,882	235,773	231,828
	Assets £	86,391	270,061	84,611	138,391	74,673	81,144
Queensland ...	Number	362	434	374	323	259	307
	Liabilities £	99,207	88,311	70,916	93,235	61,827	45,583
	Assets £	24,264	30,321	14,817	19,885	14,634	7,045
South Australia ...	Number	28	35	24	47	39	93
	Liabilities £	36,900	40,798	15,221	34,370	11,690	59,412
	Assets £	20,824	25,128	14,633	12,509	6,102	44,781
Western Australia	Number	65	76	79	101	107	126
	Liabilities £	34,532	51,548	34,952	62,487	51,418	59,364
	Assets £	21,845	17,297	10,661	13,862	23,408	22,012
Tasmania ...	Number	7	5	5	11	4	5
	Liabilities £	2,439	6,018	1,242	6,792	1,019	2,340
	Assets £	508	3,792	33	3,486	187	1,440
Commonwealth ...	Number	1,225	1,414	1,450	1,405	1,400	1,454
	Liabilities £	596,368	832,509	562,846	1,024,829	650,937	578,267
	Assets £	257,310	471,036	247,762	440,356	279,127	249,623
New Zealand ...	Number	222	206	204	257	304	305
	Liabilities £	105,193	120,401	98,806	130,911	161,356	218,898
	Assets £	58,658	61,604	46,767	86,094	100,813	108,376

For several reasons comparisons drawn from the figures in the above table are of little value. In the first place, the statements of assets and liabilities are notably unsatisfactory, particularly in regard to the former. Then, again, there is wide dissimilarity in regard to the laws in force in the various States and the method of procedure thereunder in connection with bankruptcy. Further, there are no means of knowing how many persons in each State who were in a bankrupt condition made private arrangements with their creditors either personally or by intervention of a solicitor. The figures quoted in the table exclude the private arrangements in Victoria and South Australia, and the liquidations in Queensland and Tasmania. The Tasmanian statements for the years 1901 and 1903 are defective, inasmuch as they do not include the whole of the assets and liabilities.

6. **High Court of Australia.**—Under the provisions of section 71 of the Commonwealth Constitution Act, the judicial power of the Commonwealth is vested in a federal Supreme Court, called the High Court of Australia, and in such other courts as the Parliament creates or invests with federal jurisdiction. The Federal High Court possesses both original and appellate jurisdiction, but so far its activities have been confined principally to the latter form. The powers of the court are defined in Chapter III. of the Constitution Act and in the Judiciary Act of 1903. At present the court consists of a Chief Justice and four other judges. Sittings of the court are held in the capitals of the various States as occasion may require. The following statement shews the transactions of the High Court from October, 1903, to 31st December, 1906:—

HIGH COURT.—TRANSACTIONS, 1903 TO 1906.

Items.	1903.	1904.	1905.	1906.
I. ORIGINAL JURISDICTION.				
Number of writs issued	3	35	16	23
Number of causes entered for trial ...	1	13	12	5
Verdicts for plaintiffs	1	8	11	5
Verdicts for defendants	1	5	1	1
Otherwise disposed of	1	7	3	6
Amount of judgments	£45	£560	£1,330	£2,395
II. APPELLATE JURISDICTION.				
Number of appeals set down for hearing...	1	47	89	93
Number allowed	...	31	41	42
Number dismissed	1	9	31	34
Otherwise disposed of	1	7	17	17
III. AMOUNT OF FEES COLLECTED.				
Amount in each year	£58	£450	£523	£566

§ 6. Cost of Administration of Justice.

The table below shews the expenditure from Consolidated Revenue during each of the last six years in connection with the administration of justice in each of the States and in New Zealand. Expenditure on police and prisons has been separately shewn. With regard to the figures quoted for other expenditure, a slight allowance has to be made for the fact that some extraneous expenditure has been included which it was found impossible to disentangle from the total, but the amount is in no instance large. Cost of buildings has been excluded from the return :—

EXPENDITURE ON JUSTICE, 1901 TO 1906.

State.		1901.	1902.	1903.	1904.	1905.	1906.
		£	£	£	£	£	£
New South Wales...	Police	383,332	401,269	416,542	428,374	435,577	434,934
	Gaols	97,655	101,369	101,968	103,786	93,443	85,835
	Other	258,072	235,112	240,397	243,992	227,069	216,141
Victoria	Police	287,690	293,998	311,693	311,927	313,649	312,941
	Gaols	52,812	52,429	52,736	49,574	48,841	49,408
	Other	139,585	139,299	130,009	126,561	126,200	124,680
Queensland ...	Police	183,143	184,873	172,913	161,510	159,464	176,086
	Gaols	27,694	26,474	26,389	23,306	22,573	22,724
	Other	85,704	78,379	73,285	70,319	67,621	69,108
South Australia ...	Police	83,697	84,874	84,109	85,090	82,419	85,016
	Gaols	15,873	15,806	16,094	16,501	16,599	17,232
	Other	31,537	31,995	29,889	29,342	29,906	30,423
Western Australia...	Police	119,310	123,924	130,312	128,628	126,661	126,276
	Gaols	25,625	22,727	25,792	29,248	31,610	32,719
	Other	59,901	64,508	70,982	63,889	64,746	64,607
Tasmania	Police	38,412	39,222	37,833	36,720	36,537	35,066
	Gaols	6,035	5,626	5,765	5,596	5,893	5,731
	Other	18,592	20,342	18,664	18,911	17,267	20,911
Commonwealth ...	Police	1,095,584	1,128,160	1,153,402	1,152,249	1,154,307	1,170,319
	Gaols	225,694	224,431	228,744	227,960	218,959	213,649
	Other	593,391	569,320	563,226	553,014	532,809	525,870
New Zealand	Police	117,744	120,629	123,804	126,149	130,426	135,253
	Gaols	29,526	32,318	32,070	34,976	40,943	41,357
	Other	88,799	98,544	86,979	91,514	96,128	103,849

For the purposes of comparison the above figures have been reduced to a population basis, and the results are given in the table hereunder:—

EXPENDITURE ON JUSTICE PER INHABITANT, 1901 TO 1906.

State.		1901.		1902.		1903.		1904.		1905.		1906.	
		s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
New South Wales ...	Police	5	7	5	9	5	11	5	11	5	11	5	9
	Gaols	1	5	1	6	1	5	1	5	1	3	1	2
	Other	3	9	3	5	3	5	3	5	3	1	2	10
Victoria	Police	4	9	4	10	5	2	5	2	5	2	5	1
	Gaols	0	11	0	10	0	11	0	10	0	10	0	10
	Other	2	4	2	4	2	2	2	1	2	1	2	0
Queensland	Police	7	4	7	3	6	9	6	3	6	1	6	7
	Gaols	1	1	1	0	1	0	0	11	0	10	0	10
	Other	3	5	3	1	2	10	2	8	2	7	2	7
South Australia ...	Police	4	7	4	8	4	7	4	7	4	5	4	6
	Gaols	0	11	0	10	0	11	0	11	0	11	0	11
	Other	1	9	1	9	1	8	1	7	1	7	1	7
Western Australia ...	Police	12	8	12	0	11	9	10	11	10	1	9	9
	Gaols	2	9	2	2	2	4	2	6	2	6	2	6
	Other	6	4	6	3	6	5	5	5	5	2	5	0
Tasmania	Police	4	6	4	6	4	3	4	1	4	1	3	11
	Gaols	0	8	0	8	0	8	0	7	0	8	0	8
	Other	2	2	2	4	2	1	2	1	1	11	2	4
Commonwealth ...	Police	5	9	5	10	5	11	5	10	5	9	5	9
	Gaols	1	2	1	2	1	2	1	2	1	1	1	0
	Other	3	1	3	0	2	11	2	10	2	8	2	7
New Zealand ...	Police	3	0	3	0	3	0	3	0	3	0	3	0
	Gaols	0	9	0	10	0	9	0	10	0	11	0	11
	Other	2	3	2	3	2	2	2	2	2	2	2	4

The total expenditure in the Commonwealth in connection with the administration of justice has, therefore, fallen from ten shillings per inhabitant in 1901 to nine shillings and fourpence in 1906. Police expenditure works out to exactly the same average for the two years in question, the average for gaols is about twopence per head less, while the expenditure on courts and the remaining machinery of justice has fallen by sixpence per head. In New Zealand the total has increased somewhat during the six years covered by the table, but the average is, nevertheless, considerably lower than that of the Commonwealth.

The expenditure shewn in the two foregoing tables is expenditure by the State Governments only, and does not include expenditure in connection with the Federal High Court, which, as shewn in Section XIX. of this work, was during the four financial years 1903-4, 1904-5, 1905-6, and 1906-7, £7,814, £13,601, £15,272, and £20,383 respectively.

SECTION XXIV.

PUBLIC BENEVOLENCE.

§ 1. Introductory.

1. **General.**—Charity and charitable effort in Australia may be classified under three headings, viz.:—(1) State; (2) public; (3) private. To the first belong all institutions wholly provided for by the State, *quâ* State; examples are the lunatic asylums in the various States, the Government hospitals in Western Australia, and the Government asylums for infirm in New South Wales. The second class includes public institutions of two kinds, viz.:—(i.) Institutions partially subsidised by the State or State-endowed, but receiving also private aid, and (ii.) those wholly dependent upon private aid. To the former division belong such institutions as the Melbourne and other large metropolitan hospitals. Of the latter examples are institutions established and endowed by individuals for the benefit of the needy generally. To the third class belong all charitable movements of a private or special character.

A more or less accurate statistical account is possible in classes (i.) and (ii.), but in regard to (iii.) it may be said that, for obvious reasons, no tabulation is possible. Public response to special appeals and summary relief in kind, often considerable, is nevertheless not statistically recorded. Hospitals, orphanages, homes, benevolent asylums, etc., form, of course, the main channels in which the current of charity flows. There are, nevertheless, numerous other and minor charities, perhaps less definitely established and less frequently noticed, which mark the course and measure the amount of a considerable volume of private beneficence. In institutions which receive Government aid management and finance are usually relegated to executive bodies, ordinarily elected on a democratic basis.

The distribution of wealth in the Australian Commonwealth, and the elasticity, economically, of its general condition as regards scope for the exercise of natural ability, operate to prevent the development of a permanent pauper class, and at the same time lessen in a dual way the burden of charity. It does this latter by increasing, on the one hand, the number of people whose prosperity enables them to relieve the indigent and unfortunate, and by reducing, on the other, the number who need assistance. No poor-rate is levied in Australia, and Government aid without return is required only for the aged and disabled. The only States which have an old-age pension system are New South Wales and Victoria.

To meet temporary conditions, or rather what ought to be temporary conditions, various relief works have been started from time to time, in which the able-bodied who may be forced to seek official relief are required to make some return for the assistance afforded. In the past attempts to relieve the unemployed have led to large expenditures, but at the present time the entire scheme of such relief is on an altogether more satisfactory footing.

In each of the States the care of the insane is undertaken by the Government. Their condition has been steadily ameliorated by progress in psychiatry.

Young children deprived of parental training and control are cared for and educated in "orphanages" and "industrial schools," and those who have been guilty of some specific offence, or who are beyond adequate parental control, are committed to "reformatories."

In common with other civilised communities, relief funds have from time to time been organised for famine-stricken territories (*e.g.*, China, India, etc.), or for places where plague, flood, or fire has shewn the need of urgent relief. Proper statistical records of these, however, are not available.

Not uncommonly the Daily Press accepts the duties of collectorship in charity appeals.

2. **Difficulties of General Tabulation.**—State differences in the organisation of charities necessitate the separate treatment of each State, but certain of the larger features of the statistics of benevolence may be combined for the whole Commonwealth. Combinations for the whole of Australia for the six years ended 1906 are given for hospitals, benevolent asylums, orphanages, and hospitals for the insane. Satisfactory tabulation for other charities is not yet possible. Where the combination has been for dissimilar periods the nearest years have been taken.

§ 2. The Larger Charities of Australia.

1. **Hospitals.**— Most of the State capitals have several large and well-equipped hospitals, and there is at least one in every important town. In large centres there are hospitals for "specials"—consumptives, women, children, infectious diseases, incurables, etc. The hospitals in Australia, with the admissions, patients treated, deaths, and expenditure, are shewn in the following table; but the figures include (except number of hospitals) for 1901, 1902, 1903, and 1904, only the Adelaide Hospital among South Australian institutions:—

AUSTRALIAN HOSPITALS, 1901 TO 1906.

Particulars.	1901.	1902.	1903.	1904.	1905.	1906.
Number of institutions	285	293	302	304	308	313
Number of beds ...	10,526	10,808	11,084	11,384	11,778	12,108
Admissions during year	84,993	87,449	89,991	89,650	94,117	99,308
Indoor patients treated	91,147	98,412	96,608	96,748	101,200	106,488
Deaths	7,114	7,489	7,581	6,967	7,476	7,627
Expenditure ... £	538,920	571,167	595,689	582,761	602,394	612,628

In addition to those admitted to the institutions there are large numbers of out-patients. The exact number of these cannot be given, but 217,000 would be a rough estimate of distinct cases for 1906.

The leading facts regarding hospitals in the States are summarised in the tables which follow:—

HOSPITALS IN NEW SOUTH WALES, 1901 TO 1906.

Particulars.	1901.	1902.	1903.	1904.	1905.	1906.
Number of institutions ...	118	119	128	130	132	134
Number of beds	3,391	3,523	3,744	3,935	4,088	4,252
Number admitted	30,943	32,181	34,704	35,916	36,187	39,012
Total number under treatment	33,012	34,426	37,011	38,480	38,646	41,552
Deaths	2,477	2,594	2,660	2,431	2,529	2,576
OUTDOOR RELIEF: Distinct Cases Treated—						
Ordinary	80,259	63,606	68,146	77,089	78,002	83,390
Dental Hospital	—	1,228	8,335	12,266	12,395	6,181
EXPENDITURE—						
Buildings and repairs £	17,354	25,896	23,749	32,366	34,541	26,815
Maintenance (incl'ding salaries and wages & outdoor relief) £	141,399	152,316	172,692	168,557	167,815	179,431
Miscellaneous ... £	17,365	15,971	14,674	17,575	22,808	18,666
Total ... ... £	176,118	194,188	211,115	218,498	225,164	224,912

HOSPITALS IN VICTORIA, 1901 TO 1906.

Particulars.		1901.	1902.	1903.	1904.	1905.	1906.
Number of institutions		51*	51*	51*	51*	52*	53*
Number of beds		3,234	3,310	3,336	3,395	3,458	3,627
Number admitted	Male	13,351	13,170	12,992	13,320	13,711	14,163
	Female	10,241	10,274	11,073	11,507	11,620	12,457
Total number under treatment	Male	14,732	14,518	14,377	14,801	15,191	15,603
	Female	11,047	11,076	11,914	12,412	12,565	13,407
Deaths ...	Male	1,549	1,634	1,642	1,526	1,619	1,663
	Female	823	785	844	859	806	936
OUTDOOR RELIEF—							
Distinct cases treated		63,161	60,905	58,381	64,470	63,277	61,403
Total attendances		300,037	212,094	208,761	226,300	217,286	222,144
EXPENDITURE—							
Buildings & extraordinary repairs £		15,306	12,253	21,936	12,783	21,170	19,851
Maintenance	Ordinary repairs £	3,493	3,427	2,273	2,225	2,108	2,274
	All other £	124,901	136,064	137,101	133,427	136,950	143,932
Miscellaneous (including interest) £		1,206	891	1,216	1,915	2,109	1,226
Total ... £		144,906	152,635	162,526	150,350	162,337	167,283

* Nine of the general hospitals included here are also benevolent asylums.

HOSPITALS IN QUEENSLAND, 1901 TO 1906.

Particulars.		1901.	1902.	1903.	1904.	1905.	1906.
Number of institutions... ...		71	72	75	77	75	76
Number of beds		2,349	2,425	2,467	2,512	2,517	2,499
Number admitted ...	Male	12,779	12,533	12,365	11,831	12,190	12,335
	Female	5,828	6,445	6,526	6,426	6,653	6,630
Total number under treatment	Male	13,627	13,152	13,240	12,753	13,031	13,205
	Female	6,161	6,803	6,961	6,920	7,092	7,053
Deaths	Male	942	1,039	980	859	981	920
	Female	337	398	433	366	375	349
EXPENDITURE—							
Maintenance ... £		111,958	110,916	114,294	104,913	100,670	106,679
Administration ... £			6,671	6,179	6,082	6,173	4,961
Extraordinary (chiefly for buildings) ... ... £		12,339	7,541	5,480	17,412	6,655	3,223
Total ... ... £		124,297	125,128	125,953	128,407	113,498	114,863

HOSPITALS IN SOUTH AUSTRALIA, 1901 TO 1906.

Particulars.		1901.*	1902.*	1903.*	1904.*	1905.	1906.
Number of institutions		1	1	1	1	9	9
Number of beds		320	320	284	284	481	501
Number of admissions ...	Male	1,992	1,786	1,666	1,421	2,350	2,448
	Female	1,379	1,407	1,389	1,303	1,644	1,756
Total number under treatment	Male	3554	1,905	1,774	1,529	2,504	2,609
	Female		1,497	1,463	1,380	1,761	1,867
Deaths...		282	264	291	265	361	330
Out-patients (attendances) ...		17,233	20,233	20,059	20,818	26,404	26,111
Expenditure ... ... £		20,104	19,065	17,542	15,491	24,071	24,826

* Adelaide Hospital only; particulars of other hospitals not being available.

HOSPITALS[*] IN WESTERN AUSTRALIA, 1901 TO 1906.

Particulars.		1901.	1902.	1903.	1904.	1905.	1906.
Number of institutions ...		24	29	27	25	27	28-
Admissions ...	Male	5,066	4,621	4,584	4,344	4,778	4,773
	Female		1,284	1,438	1,499	1,611	1,931
Total number under treatment	Male	4,124	5,905	4,872	4,649	5,091	5,101
	Female	1,266	4,864	1,536	1,601	1,734	2,024
Deaths ...	Male	383	422	373	381	400	423
	Female	91	102	103	121	130	161
EXPENDITURE—							
Salaries ...	£	20,764	22,685	23,589	22,405	23,570	23,268
Other	£	29,877	31,828	31,432	30,341	29,906	31,028
Total	£	50,641	54,513	55,021	52,746	53,476	54,296

[*] Government, Perth and Fremantle hospitals only; particulars of other hospitals not being available.

HOSPITALS IN TASMANIA, 1901 TO 1906.

Particulars.		1901.	1902.	1903.	1904.	1905.	1906.
Number of institutions ...		13	14	13	13	13	13
Number of beds		465	437	453	458	432	429
Admissions... ...	Male	1,985	2,149	1,900	1,216	1,965	2,225
	Female	1,429	1,599	1,354	867	1,408	1,578
Total number under treatment ...	Male	2,099	2,258	2,021	1,332	2,084	2,374
	Female	1,525	1,708	1,439	941	1,501	1,693
Deaths	Male	147	142	150	92	182	157
	Female	83	109	105	67	93	112
Out-patients ...	Cases	3,687	4,566	3,467	2,711	4,265	5,297
EXPENDITURE—							
Buildings and repairs	£	1,304	889	598	783	902	1,451
Maintenance ...	£	17,660	23,642	19,243	12,881	18,464	17,831
Miscellaneous ...	£	3,790	1,112	3,691	3,605	4,482	7,166
Total ...	£	22,754	25,643	23,532	17,269	23,848	26,448

2. **Benevolent and Destitute Asylums.**—In some of the institutions for the relief of the destitute, persons of all ages are admitted, as in the case of the Adelaide Destitute Asylum, but there is in general a well-marked division, orphanages being provided for the young, and benevolent asylums for the aged. In the summaries which follow only the larger institutions which come wholly or chiefly under one or other of these heads are included:—

BENEVOLENT AND DESTITUTE ASYLUMS, COMMONWEALTH, 1901 TO 1906.

Particulars.	1901.	1902.	1903.	1904.	1905.	1906.
Number of institutions ...	19	19	20	22	22	22
Number of beds ...	8,102	7,707	8,004	8,341	8,689	8,678
Admissions	7,389	7,824	8,307	8,142	7,560	8,030
Total inmates during year	16,298	15,481	15,956	16,420	16,085	16,571
Deaths	1,412	1,339	1,432	1,520	1,441	1,486
Expenditure ... £	146,900	154,699	174,316	171,080	164,908	176,823

GOVERNMENT ASYLUMS FOR INFIRM IN NEW SOUTH WALES, 1901 TO 1906.

Particulars.		1901.	1902.	1903.	1904.	1905.	1906.
Number of institutions		6	6	6	6	6	6
Number of beds		4,093	3,521	3,730	3,948	4,079	4,068
Number admitted ...	Male	4,075	3,964	4,908	4,480	4,265	4,616
	Female	621	622	556	788	524	542
Inmates at end of year ...	Male	3,330	2,870	3,329	3,529	3,490	3,309
	Female	768	640	731	768	758	722
Deaths		768	697	722	868	726	805
EXPENDITURE—							
Buildings and repairs ...	£	2,166	2,008	3,075	2,566	2,272	1,946
Maintenance	£	63,751	65,664	68,265	81,044	64,137	71,345
Miscellaneous ...	£	2,541	2,404	12,354	251	7,708	6,727
Total	£	68,458	70,076	83,694	83,861	74,117	80,018

BENEVOLENT ASYLUMS,* VICTORIA, 1901 TO 1906.

Particulars.		1901.	1902.	1903.	1904.	1905.	1906.
Number of institutions ...		6	6	7	8	8	8
Number of beds		2,435	2,437	2,649	2,741	2.730	2,710
Admissions... ...	Male	967	1,192	1,078	1,010	912	1,041
	Female	329	398	374	343	359	319
Total number of inmates during year...	Male	2,648	2,641	2,770	2,723	2,638	2,745
	Female	1,026	1,029	1,119	1,137	1,136	1,110
Deaths	Male	308	279	334	310	333	313
	Female	94	135	136	123	129	140
OUTDOOR RELIEF—							
Distinct cases		1,229	2.887	2,384	2,330	2,128	1,942
Total attendances		39,824	28,336	28,999	25,408	23,890	21,253
EXPENDITURE—							
Bldgs. & extraord'ary repairs	£	768	537	601	441	1,556	1,458
Maintenance	Ord'y repairs £	808	742	487	693	545	884
	All other £	29,512	30,431	30,275	30,571	29,474	29,710
Outdoor relief ...	£	4,468	2,988	3,174	3,018	2,658	2,534
Miscellaneous (incl. interest)	£	122	90	130	309	479	318
Total		35,678	34,797	34,667	35,032	34,712	34,904

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* Nine of the general hospitals are also benevolent asylums, and figures for them are included in the statistics for hospitals.

ADULT INMATES, DESTITUTE ASYLUM,* ADELAIDE, 1901 TO 1906.

Particulars.	1901.	1902.	1903.	1904.	1905.	1906.
Total adult inmates during the year ...	705	686	694	695	655	664
Average number of adult inmates ...	409	431	428	420	402	412
Number of deaths of adults ...	70	79	76	95	76	80
Total expenditure ... ... £	18,306	20,450	22,806	22,903	20,483	19,969

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* The institution includes lying-in and children's departments; the expenditure is for the institution, that for the various departments not being separately furnished.

BENEVOLENT ASYLUMS, QUEENSLAND, 1901 TO 1906.

Particulars.		1901.	1902.	1903.	1904.	1905.	1906.
Number of institutions		4	4	4	4	4	4
Number of beds		1,104	1,266	1,109	1,109	1,243	1,243
Number admitted ...	Male	490	628	464	433	448	432
	Female	151	168	124	100	119	111
Total number of inmates during year	Male	1,363	1,516	1,500	1,436	1,455	1,482
	Female	357	366	348	320	319	329
Deaths	Male	158	128	151	117	143	119
	Female	22	19	25	18	18	28
Expenditure—							
Building	£	1,409	173	296	164	219	243
Furniture	£	33	25	78	52	32	26
Maintenance ...	£	19,960	19,091	22,741	17,689	18,497	18,405
Outdoor relief ...	£	13,377	20,056	21,332	21,967	24,774	28,988
Miscellaneous ...	£	80	50	76	311	445	1,676
Total	£	34,859	39,395	44,523	40,183	43,967	49,338

HOMES FOR THE DESTITUTE,* WESTERN AUSTRALIA, 1901 TO 1906.

Particulars.		1901.	1902.	1903.	1904.	1905.	1906.
Number of institutions		3	3	3	4	4	4
Number of beds		470	483	516	543	537	537
Admissions	Male	647	719	653	856	811	862
	Female	109	133	155	182	122	107
Total number of inmates during year	Male	947	1,059	1,020	1,275	1,256	1,325
	Female	168	186	224	251	195	174
Deaths	Male	56	77	60	74	78	67
	Female	11	4	4	10	14	14
State expenditure	£	7,896	10,431	11,432	12,004	12,112	12,563

* One of these institutions includes a lying-in department.

3. **Orphanages, Industrial Schools, etc.**—The organisation of charitable effort varies greatly in regard to orphans and waifs. In many institutions shelter and some form of industrial training is offered to destitute children of all classes, whether orphans or not, while some of those styled orphanages do not confine their relief to orphans strictly so called. The figures in the next table are those for institutions where, it is believed, the principal effort is on behalf of those who are really orphans:—

ORPHANAGES IN COMMONWEALTH, 1901 TO 1906.

Particulars.	1901.	1902.	1903.	1904.	1905.	1906.
Number of institutions ...	30	30	32	35	35	35
Number of beds	*2,853	*2,989	†2,379	†2,732	†2,781	†2,848
Admissions	1,207	1,242	1,305	1,328	1,286	1,333
Total number inmates during yr.	3,860	4,074	4,324	4,772	4,887	4,868
Deaths	7	5	20	11	17	15
Expenditure ... £	56,178	59,997	60,865	60,295	60,564	61,098

* Beds in institutions in Tasmania not included. † Beds in institutions in New South Wales and Tasmania not included.

In New South Wales the care of the destitute or neglected children is entrusted to the State Children's Relief Board, whose officers are charged with a strict supervision regarding the welfare of the children and the relation to them of those to whom they are boarded out. Useful trades and profitable occupations are taught, and many of the children become useful members of society.

The number of children received and discharged each year by the State Children's Relief Board, from 1901 to 1907, was as follows:—

CHILDREN'S RELIEF BOARD, NEW SOUTH WALES, 1901 TO 1907.

Year ended 5th April ...	1901.	1902.	1903.	1904.	1905.	1906.	1907.
Number received ...	596	520	644	614	612	654	696
Discharges and deaths	530	710	559	640	591	564	562
Net addition ...	66	—190	85	—26	21	90	134

— Denotes a decrease.

As the table hereunder shews, the number of children under the control of the Board has remained practically constant for the years 1901 to 1907:—

Under Control on 5th April—	Supported by Government.		Adopted without Remuneration & Boarded without Subsidy.		Apprenticed (not paid for by Government).		Total under Control.		
	Boys.	Girls.	Boys.	Girls.	Boys.	Girls.	Boys.	Girls.	Total.
1901	1,346	1,132	69	74	790	499	2,205	1,705	3,910
1902	1,192	1,016	70	79	811	552	2,073	1,647	3,720
1903	1,288	1,010	84	93	743	587	2,115	1,690	3,805
1904	1,257	1,125	83	101	747	466	2,087	1,692	3,779
1905	1,293	1,094	92	133	692	496	2,077	1,723	3,800
1906	1,276	1,092	105	149	733	535	2,114	1,776	3,890
1907	1,375	1,118	120	167	735	509	2,230	1,794	4,024

The expenditure per child under control has fluctuated somewhat, but the expenditure per inhabitant has remained almost constant at about elevenpence:—

EXPENDITURE BY THE RELIEF BOARD, 1901 TO 1907.

Year ended 5th April—	1901.	1902.	1903.	1904.	1905.	1906.	1907.
Net expenditure £	61,790	64,720	67,236	69,336	68,897	65,761	67,694
Per child ...	£15 16s.	£17 8s.	£17 13s.	£18 7s.	£18 3s.	£16 18s.	£16 16s.
Per inhabitant ...	11d.	11d.	11d.	11d.	11d.	11d.	11d.

ORPHANAGES, NEW SOUTH WALES, 1901 TO 1906.

Particulars.		1901.	1902.	1903.	1904.	1905.	1906.
Number of institutions		9	9	10	11	11	11
Admissions	Male	58	57	74	83	81	93
	Female	133	161	201	164	172	160
Total number under care	Male	220	238	277	347	351	373
	Female	458	567	651	594	622	636
Deaths	Male	...	...	...	...	...	2
	Female	1	...	3	2	...	...
EXPENDITURE—							
Buildings and repairs ...	£	1,321	2,125	1,211	1,189	1,071	1,007
Maintenance (including salaries and wages)	£	6,513	7,033	6,782	7,785	7,046	8,409
Other	£	581	623	1,160	428	1,762	659
Total	£	8,415	9,781	9,153	9,402	9,879	10,075

There are three reformatory institutions—the Carpenterian State Reformatory and the "Sobraon" State Training Ship for boys, the enrolment for 1906 being 188 and 570 respectively; and the Girls' State Industrial School, where for the same year the enrolment was 148.

ORPHANAGES, VICTORIA, 1901 TO 1906.

Particulars.		1901.	1902.	1903.	1904.	1905.	1906.
Number of institutions ...		7	7	7	9	9	9
Number of beds		996	1,005	1,083	1,338	1,386	1,399
Admissions... ...	Male	157	181	208	240	250	257
	Female	98	147	151	176	163	172
Total number under care	Male	806	823	873	1,002	1,055	1,070
	Female	581	590	609	775	779	787
Deaths	Male	...	1	5	4	6	5
	Female	2	1	2	2	4	6
EXPENDITURE—							
Bldgs. & extraord'ary repairs £		2 077	3,856	2,585	2,711	1,770	1,250
Maintenance	Ord'y repairs £	230	520	412	343	567	642
	All other £	15,313	15,178	16,464	17,151	17,413	17,728
Miscellaneous (incl. interest) £		52	81	103	303	311	517
Total ... £		17,672	19,635	19,564	20,508	20,061	20,137

NEGLECTED CHILDREN AND REFORMATORY SCHOOLS,* VICTORIA, 1901 TO 1906.

Particulars.	1901.	1902.	1903.	1904.	1905.	1906.
Admissions	1,281	981	554	511	589	819
Total number under care ...	6,512	6,636	6,299	5,872	5,765	5,867
Discharges, etc.	857	891	938	696	717	741
Inmates—average number ...	3,908	4,113	3,943	3,604	3,425	3,444
Distribution at end of year—						
In Government schools ...	131	151	134	132	135	110
In assisted schools ...	190	200	192	189	151	144
Boarded out	3,701	3,753	3,363	3,154	3,044	3,315
At service, etc.	1,633	1,641	1,672	1,701	1,718	1,557
Total	5,655	5,745	5,361	5,176	5,048	5,126
Government expenditure £	67,332	72,010	67,391	63,130	61,748	61,266
Net cost to State ... £	65,668	70,219	66,111	61,687	60,263	59,623

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* In addition, there are a small number of children maintained by the State, who are incapacitated and free from legal control.

ORPHANAGES, QUEENSLAND, 1901 TO 1906.

Particulars.		1901.	1902.	1903.	1904.	1905.	1906.
Number of institutions ...		6	6	6	6	6	6
Number of beds		868	897	915	977	972	978
Admissions... ...	Male	290	276	242	221	182	199
	Female	354	295	295	300	308	302
Total number under care	Male	604	601	586	594	545	539
	Female	692	656	675	771	807	792
Deaths	Male	1	1	7	1	3	2
	Female	2	1	2	2	3	1
EXPENDITURE—							
Building ... ... £		124	49	100	183	135	288
Furniture ... £		191	111	154	165	299	144
Maintenance ... £		11,790	11,697	11,996	11,476	11,514	11,573
Outdoor relief ... £		7,889	8,063	8,066	7,195	6,623	6,496
Miscellaneous ... £		2,545	2,428	2,614	2,234	2,461	2,503
Total ... £		22,539	22,348	22,930	21,253	21,032	21,004

STATE CHILDREN, SOUTH AUSTRALIA, 1900-1 TO 1905-6.

Particulars.	1900-1.		1901-2.		1902-3.		1903-4.		1904-5.		1905-6.	
	Boys.	Girls.	Boys.	Girls.	Boys.	Girls.	Boys.	Girls.	Boys.	Girls.	Boys.	Girls.
ADMISSIONS—												
Industrial schools ..	65	53	101	72	89	70	94	70	56	61	78	72
Reformatories... ...	17	30	14	50	22	59	8	51	4	45	9	33
Probationary schools ...	...	...	...	...	...	...	1	...	3	...	4	1
Methodist Home ...	...	...	...	...	...	...	...	...	...	2	...	1
Total	82	85	115	122	111	129	103	121	63	108	91	107
	167		237		240		224		171		198	
NUMBER ON 30TH JUNE—												
Industrial schools ...	16	33	26	44	14	38	20	30	17	29	17	30
Reformatories... ...	46	89	41	105	46	96	41	76	37	82	38	75
Probationary schools ...	15	26	17	33	19	28	29	28	25	22	31	26
Methodist Home ...	...	...	...	..	...	...	...	...	...	2	...	...
Total	77	148	84	182	79	162	90	134	79	135	86	131
	225		266		241		224		214		217	
Placed out	1,006		1,055		1,114		1,114		1,046		1,052	
Total	1,231		1,321		1,355		1,338		1,260		1,269	
DEATHS—												
Industrial schools ...	...		3		3		1		1		2	
Reformatories... ...	...		...		...		1		...		...	
In other institutions and placed out	14		11		7		11		8		5	
Total	14		14		10		13		9		7	

ORPHANAGES, WESTERN AUSTRALIA, 1901 TO 1906.

Particulars.		1901.	1902.	1903.	1904.	1905.	1906.
Number of institutions		7	7	8	8	8	8
Admissions	Male	76	82	77	101	84	103
	Female	35	42	47	39	39	42
In institution at end of year...	Male	265	287	285	314	331	364
	Female	162	186	217	243	248	259
Deaths	Male	1	1	...	...	...	...
	Female	...	...	...	...	...	...
State expenditure ...	£	6,864	7,456	8,292	8,391	8,790	9,080

GOVERNMENT INDUSTRIAL SCHOOL, WESTERN AUSTRALIA, 1901 TO 1906.

Particulars.		1901.	1902.	1903.	1904.	1905.	1906.
Admissions	Male	47	74	66	95	87	108
	Female	16	39	35	55	36	58
Inmates	Male	94	105	105	130	133	156
	Female	32	49	61	77	60	80
Deaths	Male	...	...	...	...	1	2
	Female	...	...	1	1	...	...
State expenditure ...	£	1,482	1,489	1,826	1,991	1,962	2,048

ORPHANAGE, TASMANIA, 1901 TO 1905.

Particulars.	1901.	1902.	1903.	1904.	1905.
Admissions	6	1	10	4	7
Inmates during year ...	52	48	56	47	48
Deaths	...	...	1	...	1
Expenditure ... £	688	777	926	741	802

INDUSTRIAL SCHOOLS, UNDER BENEVOLENT INSTITUTIONS, TASMANIA, 1901 TO 1905.

Particulars.		1901.	1902.	1903.	1904.	1905.
Number of schools		3	3	3	3	3
Admissions	Male	5	4	8	4	5
	Female	4	11	9	9	9
In institutions during year ...	Male	28	28	31	29	29
	Female	63	69	67	65	66
Died	Male	...	...	...	...	...
	Female	...	1	...	...	...
Remaining at end of year ...	Male	23	23	25	24	21
	Female	58	58	57	57	14
Expenditure	£	1,865	1,958	1,722	1,630	8,169

BOARDING-OUT SYSTEM, TASMANIA, 1901 TO 1905.

Particulars.	1901.	1902.	1903.	1904. Half-year.	1904-5.
Number of children	221	218	175	145	152
Males	120	124	90	78	81
Females...	101	94	85	67	71
Expenditure ... ... £	2,206	2,086	1,808	861	1,608

4. **Lepers.**—In New South Wales a lazaret is maintained for the isolation and care of lepers, the number of which has not materially changed during recent years:—

NO. OF LEPERS IN THE LAZARET, NEW SOUTH WALES, 1901 TO 1906.

Classification.	1901.	1902.	1903.	1904.	1905.	1906.
In lazaret on 1st January...	11	14	10	17	17	18
Admitted during the year...	8	1	10	8	7	7
Died during the year	5	2	3	1	2	1
Discharged	...	2	...	...	1	1
Repatriated	...	1	...	7	3	3
Remaining in lazaret on 31st December ...	14	10	17	17	18	20

The numbers of females (included in above) were: one in 1901, one in 1902, two in 1904, two in 1905, two in 1906.

The expenditure in 1906 was £1555, and was provided by Government.

~~Leprosy has existed also in other States, but details have not been furnished.~~

5. **Hospitals for the Insane.**—The method of compiling insanity statistics has been fairly uniform throughout the States, but the various methods of observing the early stages of the development of insanity introduce an element of uncertainty which considerably reduces the value of comparison. In the summary given below licensed houses (except as regards expenditure) are included, but not reception houses and observation wards in gaols, figures for which are given under the statistics of the States:—

HOSPITALS FOR INSANE, COMMONWEALTH, 1901 TO 1906.

Particulars.	1901.	1902.	1903.	1904.	1905.	1906.
Number of institutions ...	25	24	25	28	27	27
Number of beds	12,189	12,586	12,716	13,109	13,144	13,507
Admissions	2,569	2,490	2,616	2,640	2,593	2,839
Total number under treatment...	14,791	15,513	15,876	16,164	16,462	16,803
Discharged as recovered, relieved, or improved	1,157	1,190	1,181	1,300	1,183	1,258
Deaths	861	899	1,032	986	966	1,003
Expenditure ... £	349,730	387,137	392,005	386,534	387,395	404,354

The proportion of insane, as well as the total number under treatment, as returned, is gradually rising. In the next table the number of insane under official care in Australia is compared to the total population :—

PROPORTION OF INSANITY IN HOSPITALS FOR THE INSANE, COMMONWEALTH, 1901 TO 1906.

	1901.	1902.	1903.	1904.	1905.	1906.
Lunatics at end of year ...	12,427	12,770	13,142	13,443	13,851	14,349
Per 100,000 of population ...	325	329	334	337	342	348

Increase in the number of recorded cases of insanity does not necessarily imply an actual increase, and does not here imply an equivalent increase. Consequent upon the development of a more rational attitude to the treatment of mental cases there is growing up a greater willingness to submit necessary cases to treatment at an earlier stage than formerly. It is important to bear this in mind, because the small progressive increase in the preceding table is probably to be attributed largely, if not solely, to this circumstance.

GOVERNMENT HOSPITALS FOR INSANE, NEW SOUTH WALES, 1901 TO 1906.

Particulars.		1901.	1902.	1903.	1904.	1905.	1906.
Number of institutions ...		7	7	7	7	7	7
Number admitted	Male	611	576	618	597	607	668
	Female	413	351	427	385	379	420
Total number under treatment	Male	3,109	3,414	3,528	3,575	3,754	3,785
	Female	2,156	2,247	2,355	2,435	2,457	2,492
DISCHARGED—							
As recovered	Male	198	209	217	246	288	225
	Female	191	159	158	178	172	192
As relieved ...	Male	28	27	28	31	26	35
	Female	24	15	31	31	27	20
Deaths ...	Male	191	199	240	242	219	273
	Female	96	118	108	124	120	112
Inmates at end of year	Male	2,660	2,795	2,920	2,997	3,117	3,251
	Female	1,763	1,823	1,956	2,013	2,076	2,171
Total expenditure	£	123,531	143,253	151,309	139,974	137,971	151,439

LICENSED HOUSES FOR INSANE, NEW SOUTH WALES, 1901 TO 1906.

Particulars.		1901.	1902.	1903.	1904.	1905.	1906.
Number of institutions		3	3	3	3	3	3
Number admitted... ...	Male	7	10	7	17	7	9
	Female	14	10	13	21	16	26
Total number under treatment	Male	25	27	28	40	33	26
	Female	45	45	47	59	59	72
Discharged as recovered ...	Male	3	4	1	7	9	3
	Female	6	6	3	7	11	8
Discharged as relieved ...	Male	...	1	3	3	2	...
	Female	2	3	3	2	1	2
Deaths	Male	3	...	2	1	3	1
	Female	2	1	1	3	...	3
Inmates at end of year ...	Male	17	21	22	24	17	20
	Female	35	34	37	41	42	55

INSANE PERSONS AND DEATHS, NEW SOUTH WALES, 1901 TO 1906.

Year.	Number of Institutions.	Number of Patients.		Deaths.	
		Total during the Year.	Average at one Time.	Number.	Per Cent. of Patients.
1901	10	5,335	4,272	292	5.5
1902	10	5,733	4,427	318	5.5
1903	10	5,958	4,633	351	5.9
1904	10	6,109	4,808	370	6.1
1905	10	6,303	4,963	342	5.4
1906	10	6,563	5,180	389	5.9

PROPORTION OF INSANE PERSONS, NEW SOUTH WALES, 1901 TO 1906.

Year.	Number of Insane Persons.			Number per One Thousand of Population.		
	Males.	Females.	Persons.	Males.	Females.	Persons.
1901	2,677	1,798	4,475	3.70	2.74	3.24
1902	2,816	1,857	4,673	3.80	2.78	3.32
1903	2,942	1,993	4,935	3.90	2.94	3.45
1904	3,021	2,054	5,075	3.91	2.98	3.46
1905	3,134	2,118	5,252	3.95	3.02	3.51
1906	3,271	2,226	5,497	4.02	3.12	3.60

RECEPTION HOUSE FOR INSANE, NEW SOUTH WALES, 1906.

Inmates.	Number of Admissions.	Total Number under Treatment.	Discharges.	Deaths.	Transfers to Lunatic Asylums.	Inmates at End of Year.
Male	622	638	499	2	129	8
Female... ...	349	351	273	1	77	...
Total ...	971	989	772	3	206	8

OBSERVATION WARDS IN GAOLS, NEW SOUTH WALES, 1906.

Inmates.	Number of Admissions.	Total Number under Treatment.	Discharges.	Deaths.	Inmates at End of Year.
Male	118	131	114	...	17
Female	14	15	14	...	1
Total	132	146	128	...	18

HOSPITALS FOR INSANE,* VICTORIA, 1901 TO 1906.

Particulars.		1901.	1902.	1903.	1904.	1905.	1906.
Number of institutions ...		7	7	7	10	9	9
Admissions ...	Male	418	457	433	462	438	446
	Female	351	341	336	388	374	412
Total number under treatment ...	Male	2,794	2,825	2,909	2,916	2,900	2,925
	Female	2,628	2,707	2,622	2,673	2,700	2,811
DISCHARGED—							
As cured	Male	174	176	165	189	160	172
	Female	125	132	159	151	103	158
As improved ...	Male	11	15	24	29	39	41
	Female	16	14	24	37	42	43
Deaths	Male	202	203	217	203	185	158
	Female	128	129	145	135	137	137
Inmates at end of year	Male	2,307	2,354	2,371	2,395	2,436	2,486
	Female	2,194	2,193	2,199	2,251	2,332	2,390
Expenditure ...	£	122,611	133,708	133,163	137,663	138,639	143,902

* The figures include lunacy wards at hospitals.

INSANE PERSONS AND DEATHS, VICTORIA, 1901 TO 1906.

Year.	Number of Institutions.	Number of Patients.		Deaths.	
		Total during the Year.	Average at one time.	Number.	Per cent. of Patients.
1901 ...	7	5,422	4,450	330	6.1
1902 ...	7	5,532	4,524	332	6.0
1903 ...	7	5,531	4,558	362	6.5
1904 ...	10	5,589	4,610	338	6.0
1905 ...	9	5,600	4,707	322	5.7
1906 ...	9	5,736	4,822	295	5.1

PROPORTION OF INSANE PERSONS, VICTORIA, 1901 TO 1906.

Year.	Number of Insane Persons.			Proportion per 1000 of Population.		
	Males.	Females.	Persons.	Males.	Females.	Persons.
1901 ...	2,307	2,194	4,501	3.78	3.65	3.72
1902 ...	2,354	2,193	4,547	3.87	3.63	3.75
1903 ...	2,371	2,199	4,570	3.91	3.64	3.78
1904 ...	2,395	2,251	4,646	3.96	3.72	3.84
1905 ...	2,436	2,332	4,768	3.99	3.83	3.91
1906 ...	2,486	2,390	4,876	4.03	3.88	3.96

HOSPITALS FOR INSANE, QUEENSLAND, 1901 TO 1906.

Particulars.		1901.	1902.	1903.	1904.	1905.	1906.
Number of institutions		3	3	3	3	3	3
Number admitted... ...	Male	193	204	222	186	205	241
	Female	142	135	115	103	130	120
Total number under treatment	Male	1,291	1,295	1,340	1,318	1,352	1,413
	Female	763	791	805	816	861	886
Discharged—							
As cured	Male	90	74	92	75	71	88
	Female	56	57	48	50	43	45
As improved	Male	34	39	19	31	19	11
	Female	14	8	12	5	9	12
Died	Male	76	62	96	64	89	72
	Female	37	32	37	30	42	40
Inmates at end of year ...	Male	1,091	1,118	1,132	1,147	1,172	1,240
	Female	656	690	713	731	766	789
Expenditure*	£	47,985	51,455	47,372	46,127	48,126	50,268

* The amounts given are for years ended on 30th June following, and include expenditure on reception houses.

INSANE PERSONS AND DEATHS, QUEENSLAND, 1901 TO 1906.

Year.	No. of Institutions.	Number of Patients		Deaths.	
		Total during the Year.	At End of Year.	Number.	Per Cent. of Patients.
1901	3	2,054	1,747	113	5.5
1902	3	2,086	1,808	94	4.5
1903	3	2,145	1,845	133	6.2
1904	3	2,134	1,878	94	4.4
1905	3	2,213	1,938	131	5.9
1906	3	2,299	2,029	112	4.9

PROPORTION OF INSANE PERSONS, QUEENSLAND, 1901 TO 1906.

Year.	Number of Insane Persons.			Proportion per 1000 of Population.		
	Males.	Females.	Persons.	Males.	Females.	Persons.
1901	1,091	656	1,747	3.87	2.92	3.45
1902	1,118	690	1,808	3.95	3.03	3.54
1903	1,132	713	1,845	3.97	3.09	3.58
1904	1,147	731	1,878	3.99	3.12	3.60
1905	1,172	766	1,938	4.04	3.22	3.67
1906	1,240	789	2,029	4.24	3.25	3.79

RECEPTION HOUSES FOR INSANE,* QUEENSLAND, 1901 TO 1906.

Particulars.		1901.	1902.	1903.	1904.	1905.	1906.
Number of institutions ...		4	4	4	3	3	3
Admissions... ...	Male	157	166	166	121	145	178
	Female	102	93	77	64	90	75
Total number under treatment ...	Male	163	170	170	125	148	182
	Female	105	94	78	67	91	75
Discharged as cured...	Male	31	38	27	28	22	31
	Female	12	11	8	4	4	3
Discharged as improved	Male	11	3	5	—	3	2
	Female	10	5	3	3	4	3
Removed to Lunatic Asylum	Male	113	123	131	93	118	145
	Female	81	76	64	59	82	67
Deaths	Male	4	2	3	1	1	2
	Female	1	1	—	—	1	1

* The expenditure on reception houses is included with that on hospitals for insane, given in table *supra*.

HOSPITALS FOR INSANE, SOUTH AUSTRALIA, 1901 TO 1906.

Particulars.		1901.	1902.	1903.	1904.	1905.	1906.
Number of institutions ...		2	1	1	1	1	1
Admissions	Male	116	107	112	145	137	125
	Female	98	103	99	112	93	106
Total number under treatment ...	Male	693	683	678	686	691	690
	Female	499	515	524	533	514	524
Discharged as recovered	Male	64	47	56	74	67	58
	Female	45	47	53	56	54	38
Deaths	Male	41	64	77	57	52	63
	Female	41	41	49	50	39	57
Inmates at end of year	Male	576	566	541	554	565	566
	Female	412	425	421	421	418	428
Expenditure ...	£	27,668	28,181	26,967	27,512	26,266	27,404

INSANE PERSONS AND DEATHS, SOUTH AUSTRALIA, 1901 TO 1906.

Year.	Number of Institutions.	Number of Patients.		Deaths.	
		Total during the Year.	At End of Year.	Number.	Per Cent. of Patients.
1901	2	1,192	988	82	6.9
1902	1	1,198	991	105	8.8
1903	1	1,202	962	126	10.5
1904	1	1,219	975	107	8.8
1905	1	1,205	983	91	7.5
1906	1	1,214	994	120	9.9

PROPORTION OF INSANE PERSONS, SOUTH AUSTRALIA, 1901 TO 1906.

Year.	Number of Insane Persons.			Proportion per 1000 of Population.		
	Males.	Females.	Persons.	Males.	Females.	Persons.
1901	576	412	988	3.10	2.29	2.70
1902	566	425	991	3.04	2.36	2.70
1903	541	421	962	2.89	2.32	2.61
1904	554	421	975	2.89	2.32	2.61
1905	565	418	983	2.86	2.31	2.60
1906	566	428	994	2.78	2.37	2.59

HOSPITALS FOR INSANE, WESTERN AUSTRALIA, 1901 TO 1906.

Particulars.		1901.	1902.	1903.	1904.	1905.	1906.
Number of institutions ...		2	2	3	3	3	3
Number admitted ...	Male	104	85	118	106	97	127
	Female	37	31	37	36	39	51
Total number under treatment ...	Male	301	325	381	430	448	484
	Female	117	133	139	150	162	191
Discharged as recovered or improved ...	Male	44	42	37	42	48	48
	Female	11	28	17	18	14	25
Deaths	Male	17	19	19	33	42	35
	Female	4	3	8	9	8	17
Inmates at end of year	Male	240	263	324	351	354	398
	Female	102	102	114	123	140	148
Expenditure... ...	£	13,045	14,983	15,937	19,182	21,605	23,256

INSANE PERSONS AND DEATHS, WESTERN AUSTRALIA, 1901 TO 1906.

Year.	Number of Institutions.	Number of Patients.		Deaths.	
		Total during the Year.	At End of Year.	Number.	Per Cent. of Patients.
1901	2	418	342	21	5.02
1902	2	458	365	22	4.80
1903	3	520	438	27	5.19
1904	3	580	474	42	7.24
1905	3	610	494	50	8.20
1906	3	675	546	52	7.70

PROPORTION OF INSANE PERSONS, WESTERN AUSTRALIA, 1901 TO 1906.

Year.	Number of Insane Persons.			Proportion per 1000 of Population.		
	Males.	Females.	Persons.	Males.	Females.	Persons.
1901	240	102	342	2.03	1.34	1.76
1902	263	102	365	2.03	1.22	1.71
1903	324	114	438	2.38	1.25	1.93
1904	351	123	474	2.43	1.25	1.96
1905	354	140	494	2.35	1.34	1.94
1906	398	148	546	2.59	1.37	2.09

HOSPITAL FOR INSANE, NEW NORFOLK, TASMANIA, 1901 TO 1906.

Particulars.		1901.	1902.	1903	1904.	1905.	1906.
Admissions	Male	39	45	37	38	39	46
	Female	26	35	42	44	32	42
Total number under treatment	Male	254	279	280	280	278	288
	Female	216	227	240	253	253	275
Discharged as cured or relieved	Male	7	20	19	16	15	23
	Female	14	17	17	22	11	11
Deaths	Male	13	16	19	25	21	24
	Female	10	12	14	10	9	14
Inmates at end of year ...	Male	284	243	242	239	242	240
	Female	192	198	209	221	238	242
Expenditure	£	14,890	15,557	17,257	16,076	14,788	16,278

INSANE PERSONS AND DEATHS, TASMANIA, 1901 TO 1906.

Year.	Number of Patients.		Deaths.	
	Total during the Year.	At End of Year.	Number.	Per Cent. of Patients.
1901	470	426	23	4.9
1902	506	441	28	5.5
1903	520	451	33	6.3
1904	533	460	35	6.6
1905	531	475	30	5.6
1906	563	482	38	6.7

PROPORTION OF INSANE PERSONS, TASMANIA, 1901 TO 1906.

Year.	Number of Insane Persons.			Proportion per 1000 of Population.		
	Males.	Females.	Persons.	Males.	Females.	Persons.
1901	234	192	426	2.59	2.28	2.44
1902	243	198	441	2.63	2.32	2.48
1903	242	209	451	2.60	2.42	2.51
1904	239	221	460	2.56	2.54	2.55
1905	242	233	475	2.59	2.66	2.62
1906	240	242	482	2.58	2.77	2.67

6. **Protection of Aborigines.**—For the protection of the aboriginal Australian race there are institutions, under the supervision of Aborigines Boards, where the blacks are housed and encouraged to work, the children receiving elementary education. The work is usually carried on at mission stations, but many of the natives are nomadic in habit of life, and receive food and clothing when they call, whilst others but rarely come under the notice of the boards. The native race is extinct in Tasmania. The expenditure on maintenance, etc., for 1906 was—New South Wales, £13,184; Victoria, £4,325; Queensland, £10,570; South Australia, £12,902; Western Australia, £15,125; total for Commonwealth, £56,106.

7. **Other Charitable Institutions.**—Owing to variety of name and function of other charitable institutions it has been found impracticable to give detailed results. The aid given in kind—food, clothing, tools of trade, etc.—is considerable, whilst the shelter and treatment afforded ranges from a bed for a night for casual callers in establishments ministering minor charity, to indoor treatment over long periods in those that exist for the relief of the aged and infirm. The institutions not so particularised include asylums for the deaf, dumb, and blind, lock hospitals, maternity institutions and infant homes, homes for the destitute and aged poor, industrial colonies, night shelters, crèches, homes of hope, rescue homes, free kindergarten and ragged schools, auxiliary medical charities, free dispensaries, benevolent societies, charity organisation, ambulance and health societies, boys' brigades, humane and animals' protection societies, prisoners' aid associations, bush fires and mining accidents relief funds.

8. **State Expenditure on Charities.**—The table below gives the amount expended by Government on charities. In some of the States amounts have been included for minor items, which in other States are charged to other heads. The figures are for financial years in New South Wales, Victoria, and Queensland, for calendar years in South Australia and Western Australia, and in Tasmania for calendar years from 1901 to 1904, and financial years 1905-6 and 1906-7:—

STATE EXPENDITURE ON CHARITIES, 1901 TO 1907.

State.	Year.	Amnt.	Year.	Amnt.	Year.	Amnt.	Year.	Amnt.	Year.	Amnt.	Year.	Amnt.
		£		£		£		£		£		£
N.S. Wales ...	1901-2	504,301	1902-3	572,696	1903-4	515,152	1904-5	494,818	1905-6	528,281	1906-7	493,606
Victoria ...	,,	313,735	,,	300,821	,,	292,914	,,	294,483	,,	292,454	,,	304,151
Queensland ...	,,	183,531	,,	189,832	,,	181,868	,,	174,379	,,	169,336	,,	193,721
South Aust. ...	1901	106,223	1902	105,612	1903	103,426	1904	98,635	1905	99,194	1906	101,023
Western Aust.	,,	100,647	,,	108,605	,,	100,992	,,	103,891	,,	108,122	,,	112,376
Tasmania ...	,,	50,530	,,	51,908	,,	66,975	,,	46,843	1905-6	44,671	1906-7	48,911

The annual average State expenditure for the six years was—New South Wales, £518,142; Victoria, £299,760; Queensland, £182,112; South Australia, £102,352; Western Australia, £105,772; Tasmania, £51,640; Commonwealth, £1,259,778.

9. **Total Charitable Expenditure.**—The expenditure in the Commonwealth in money on hospitals, charities, and all forms of relief publicly given, comprising the amounts furnished by Government and those raised by public subscription, etc., but excluding old-age pensions, is estimated at £1,700,000 for the year 1906.

SECTION XXV.

GENERAL GOVERNMENT.

§ 1. Scheme of Parliamentary Government.

1. **General.**—The legislative power of the Commonwealth is vested in the Federal Parliament, which consists of the Sovereign, the Senate, and the House of Representatives. The Sovereign is represented throughout the Commonwealth by the Governor-General, who, subject to the Constitution of the Commonwealth, has such powers and functions as the Sovereign is pleased to assign to him. In each State there is a State Governor, who is the representative of the Sovereign for the State, and who exercises such powers within the State as are conferred upon him by the letters patent which constitute his office, and by the instructions, which inform him in detail of the manner in which his duties are to be fulfilled. The Legislature in each State is also bi-cameral, and consists of (*a*) a Legislative Council and (*b*) a Legislative Assembly, or House of Assembly, the legislative powers of these chambers being delimited by the Commonwealth and the State Constitutions. The latter chamber, which is the larger, is always elective; the qualification for the franchise varies in character. The former chamber is, in the case of New South Wales and Queensland, nominated by the Governor-in-Council, but in the other States it is also elective, the constituencies being differently arranged and some property qualification for the electorate being required. In the Federal Parliament, however, the qualifications for the franchise are identical for both Houses.

2. **Number of Members of the Legislatures.**—The following table shews the number of members in each of the legislative chambers in the Commonwealth and in each State at the end of the year 1907:—

PARLIAMENTS OF AUSTRALIA, 1907.

Members in—	C'wealth.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Total.
Upper House	36	54	34	43	18	30	18	233
Lower House	75	90	65	72	42	50	35	429
Total ...	111	144	99	115	60	80	53	662

The Upper House is known in the Commonwealth Parliament as the Senate, and in the State Parliaments as the Legislative Council. The Lower House is known as follows:—In the Commonwealth Parliament as the House of Representatives, in the State Parliaments of New South Wales, Victoria, Queensland, and Western Australia as the Legislative Assembly, and in the State Parliaments of South Australia and Tasmania as the House of Assembly.

3. **The Cabinet and Executive Government.**—The sections of the Commonwealth Constitution Act dealing with the Executive Government are given on p. 30 hereinbefore. In both the Commonwealth and the State Legislatures the forms of Government have been founded on their prototype, the Imperial Government, and the relations established between the Ministry and the representatives of the people are in accordance with those prevailing in Great Britain. The executive powers in the Commonwealth and in the State Governments are vested in the Governor-in-Council. The Executive Council in the Commonwealth and in the majority of the States is co-extensive with a group of departmental chiefs who are usually spoken of as the Cabinet, and who change with the rise and fall of party majorities. In Victoria and Tasmania, however, the Cabinet on leaving office remain members of the Executive Council, though they no longer attend its meetings, and it is in fact an essential feature of the Cabinet system of Government that they should not do so, except to assist the Governor in transacting purely formal business, or to advise on non-political questions.

(i.) *The Executive Council.* This body is composed of the Governor and Ministers appointed by the Governor as shewn hereinafter. They are sworn both as Executive Councillors and as Ministers controlling the administrative departments. The meetings are official in character; they are presided over by the Governor-General (or Governor) and are attended by the clerk, who keeps a formal record of its proceedings. At these meetings the decisions of the Cabinet are put into official form and made effective, appointments are confirmed, resignations accepted, proceedings ordered, and notices and regulations published.

At the commencement of the year 1908 the Executive Council was composed of the following members:—

THE EXECUTIVE COUNCIL OF THE COMMONWEALTH, 1908.

Minister of External Affairs ...	The Hon. ALFRED DEAKIN (Prime Minister).
Treasurer	The Hon. Sir WILLIAM JOHN LYNE, K.C.M.G.
Minister of Trade and Customs ...	The Hon. AUSTIN CHAPMAN.
Attorney-General	The Hon. LITTLETON ERNEST GROOM.
Minister of Defence	The Hon. THOMAS THOMSON EWING.
Minister of Home Affairs ...	The Hon. JOHN HENRY KEATING.
Postmaster-General	The Hon. SAMUEL MAUGER.
Vice-President of Executive Council	The Hon. ROBERT WALLACE BEST.
Honorary Minister	The Hon. HUME COOK.

No Minister may hold office for longer than three months unless he is a member of one of the Federal Houses of Parliament.

(ii.) *The Cabinet.* The meetings of this body are private and deliberative. No one is admitted but the actual Ministry of the day, no records of the meetings transpire, and no official notice is taken of the proceedings. The members of the Cabinet being the leaders of the party in power in Parliament, control the bent of legislation and must retain the confidence of the people and also of the Governor-General (or Governor), to whom they act as an advising body. They also in effect wield, by virtue of their seats on the Executive Council, the whole executive force of the community. In summoning, proroguing, or dissolving Parliament the Governor-General (or Governor) is usually guided by the advice tendered him by the Cabinet, though legally he is in no way bound to do so. Particulars of the several Ministries which have been in office since the creation of the Commonwealth are given on pages 39 and 40, hereinbefore.

(iii.) *Constitution of Ministries.* The subjoined table shews the constitution of the Ministries in the Commonwealth and the State Governments at the end of the year 1907:—

CONSTITUTION OF MINISTRIES, 1907.

Ministers with Seats in—	C'wealth.	N.S.W	Vic.	Q'land.	S.A.	W.A.	Tas.	Total.
The Upper House ...	2	1	3	2	1	1	2	12
The Lower House ...	6	9	8	6	3	6	3	41
Total	8	10	11	8	4	7	5	53

4. **The Appointment of Ministers and of Executive Councillors.**[1]—Although it is technically possible for the Governor to make and unmake cabinets at his pleasure, under all ordinary circumstances his apparent liberty in choosing his Executive Council is virtually restricted by the operation of constitutional machinery. When a Ministry is defeated in Parliament or at the polls the procedure both in the Commonwealth and the State Parliaments generally, though not invariably, follows that prevailing in the Imperial Parliament. The members of the Ministry tender their resignations to the Governor-General or Governor, whose duty it is to announce his intention of accepting them. The resignations are not actually accepted at once, for in that case the offices would become vacant and business would be at a standstill. The outgoing Premier usually suggests to the Governor the name of the most prominent member of the Opposition, and the Governor thereupon "sends for" the person suggested; and if the latter accepts the responsibility he endeavours to form a Ministry; if he fails he informs the Governor, who applies to some other person. The distribution of portfolios is first arranged by the proposed Ministers themselves and is then submitted to the Governor for approval, which is given as a matter of course unless the list contains the name of any person against whom serious objections exist. Before appointing the persons named to the various offices the Governor accepts the resignations of the outgoing Ministers, and also appoints to seats in the Executive Council such members of the new Ministry as do not already hold them. The seats in Parliament being ordinarily vacated by their acceptance of office the new Ministers must go before their constituencies, and the result of these by-elections usually decides the attitude of the Opposition. In the Commonwealth Parliament, however, seats are not vacated by the acceptance of office. It may be seen from what has been stated above that only certain persons can in practice be chosen as members of a Ministry. The Cabinet must be chosen so that the following conditions are fulfilled:—(*a*) The members must belong to one or other of the Legislative Chambers and also to the same political party; (*b*) that party must possess a majority in the House of Representatives or in the Legislative Assembly or House of Assembly as the case may be; (*c*) the Ministers must carry out a concerted policy; (*d*) they must acknowledge the leadership of one chief Minister; and (*e*) must be under a joint responsibility, signified by resignation *en bloc* in the event of Parliamentary censure.

5. **The Resignation of Ministers.**—A Ministry is bound to resign either when it fails to command a majority in the House of Representatives, the Legislative Assembly, or the House of Assembly, as the case may be, or when a want of confidence has been clearly shewn, either (*a*) by a vote of censure, (*b*) by a declaration of want of confidence, or (*c*) by a vote disapproving of some act of the Government. In such cases the Ministry must either resign or must appeal to the country.

6. **Enactments of the Parliament.**—In the Commonwealth all laws are enacted in the name of the Sovereign, the Senate, and the House of Representatives. The subjects with respect to which the Commonwealth Parliament is empowered to make laws are enumerated in the Constitution Act (see pp. 27-8 hereinbefore). In the States laws are enacted in the name of the Sovereign by and with the consent of the Legislative Council and Legislative Assembly or House of Assembly. The Governor-General or the State

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[1] See Jenks' "Government of Victoria," pp. 269 *et seq.*

Governor acts as Viceroy as regards giving the Royal Assent to or vetoing Bills passed by the Legislatures, or reserving them for the special consideration of the Sovereign. In the States the Councils and Assemblies are empowered generally, subject to the Commonwealth Constitution, to make laws in and for their respective States in all cases whatsoever. Subject to certain limitations, they may alter, repeal, or vary their Constitution. Where a law of a State is inconsistent with a law of the Commonwealth the latter prevails, and the former is, to the extent of the inconsistency, invalid.

7. **Powers and Functions of the Governor-General and of the Governors.**—The Governor-General and the State Governors act under the authority of the commissions by which they are appointed and of letters patent under the Great Seal of the United Kingdom, and according to instructions issued by the Colonial Office and passed under the Royal Sign Manual and Signet.

(i.) *The Governor-General.* The office of Governor-General and Commander-in-Chief of the Commonwealth was constituted by letters patent issued on the 29th October, 1900, in pursuance of the provisions of the Commonwealth Constitution Act. The powers and duties of the Governor-General were further defined by Royal instructions passed on the same date. The principal and most important of his functions, legislative, as well as executive, are expressly conferred upon him by the terms of the Constitution itself. He is the custodian of the Great Seal of the Commonwealth, and has the appointment of political officers to administer Departments of State of the Commonwealth.

(*a*) His legislative functions are exercised with respect to proposed laws as finally passed by the Federal Houses of Parliament. Such Bills are presented to the Governor-General for his assent in the King's name, on receiving which they become law throughout the Commonwealth. The Governor-General may, however, withhold his assent, or may reserve any Bill for the King's pleasure. He may return to the House in which it originated any proposed law with suggested amendments. Up to the end of the year 1907 the only Bill which had not received the Governor-General's assent when presented to him was the Customs Tariff (British Preference) Act 1906, which was reserved for the signification of the King's pleasure thereon. The King may disallow any law within one year from the date on which it was assented to by the Governor-General.

(*b*) The Governor-General's executive functions are, under ordinary circumstances, exercised on the advice of his responsible Ministers. Various specific powers are vested in him by the Constitution; he may summon or prorogue Parliament and may dissolve the House of Representatives. He is the Commander-in-Chief of the military and naval forces of the Commonwealth, and is invested by the Crown with the prerogative of mercy in case of offences committed against the laws of the Commonwealth.

(*c*) The Governor-General is also invested with authority in certain matters of Imperial interest, such as the control of the naval and military forces of the Commonwealth; the observance of the relations of foreign States to Great Britain, so far as they may be affected by the indirect relations of such States to the Commonwealth; and the treatment of neutral and belligerent ships in Commonwealth waters in time of war.

The Governor-General may not leave the Commonwealth without having first obtained leave from the Imperial Government, to whom he is alone responsible for his official acts. The present Governor-General is the Right Honourable Henry Stafford, Baron Northcote, G.C.M.G., G.C.I.E., C.B. He was appointed in August, 1903, and assumed office on the 21st January, 1904.

(ii.) *The State Governors.* The powers and functions of the State Governors are, within their respective States, very similar to those exercised by the Governor-General for the Commonwealth. A State Governor is the official head of the State Legislature.

and assents in the name of the Crown to all Bills passed by the Parliament, reserving for the Royal Assent certain classes of Bills, which are regulated by the Constitution Acts and by the instructions issued by the Imperial Government. The Governors are, under ordinary circumstances, guided by their Executive Councils, the chief matters in which the exercise of discretion is required being the granting or withholding of a dissolution of Parliament when required by a Premier; the appointment of a new Ministry; or the assenting to, vetoing, or receiving of Bills passed by the legislative chambers.

It is proposed to deal with the constitution of the States and the parliamentary and administrative government both of the Commonwealth and of the States more fully in a future issue of this book.

8. **Cost of Parliamentary Government.**—The following statement shews the cost of parliamentary government in the Commonwealth and in each State, as well as in the whole of Australia, for the year ended the 30th June, 1907:—

COST OF PARLIAMENTARY GOVERNMENT, 1906-7.

Particulars.	C'lth.	N.S.W.	Vict.	Q'ld.	S.A.	W.A.	Tas.	Total.
	£	£	£	£	£	£	£	£
Governor's salary	10,000	5,000	5,000	3,000	4,000	4,000	2,750	33,750
Governor's establishment and contingencies	8,612	1,123	...	1,957	...	1,527	753	13,972
Allowances and expenses of members of Parliament	51,129	23,877	16,528	16,452	10,002	14,873	8,776	141,637
Salaries and expenses of Ministers	11,947	6.622	8.306	7 185	4,610	6,927	3,433	49,090
Executive Council — salaries and expenses	887	850	281	251	...	122	1	2,392
Salaries of officers and staff, contingencies, *Hansard*, library, refreshment rooms, water, power, light, postage, stationery, etc ...	27,745	29,775	16,179	17,103	14,246	13,100	490	118,638
Electoral office—salaries and contingencies	35,800	2,149	...	3,973	2,816	2,923	522	48,183
Cost of elections	36,906	18,261	24,745	6,818	4,568	1,999	72	93,369
Commissions & Select Committees	6,848	6,136	1,649	759	23	91	...	15,506
Total ... ... £	189,874	93,793	72,688	57,498	40,265	45,562	16,797	516,477

The cost of parliamentary printing is not generally given; for the Commonwealth it was £12,346, and for Tasmania £1383, for the year 1906-7.

§ 2. Parliaments and Elections.

1. **Qualifications for Membership and for Franchise.**—The subjoined summary gives particulars as to the legislative chambers in the Commonwealth and State Parliaments, and shews concisely the qualifications necessary for membership and for the franchise in each House. Persons who are otherwise eligible, either as members or voters, are generally disqualified on the usual grounds of being of unsound mind or attainted of treason, being convicted of certain offences, and, as regards membership, on the grounds of holding a place of profit under the Crown, being pecuniarily interested in Government contracts, or being an undischarged bankrupt.

Particulars of the numbers of electors on the roll, of electors who voted, and of the percentage which the latter formed on the former at recent elections, are given for the Commonwealth and for each individual State on pages 798 to 802 hereinafter:—

PARLIAMENTS AND ELECTORATES.

Particulars.	Commonwealth.	New South Wales.	Victoria.
1. Senate and Legislative Councils.			
Number of Members ...	36	54. May not be less than 21	34
Qualification for Membership	Adult British subjects natural-born or naturalised for 5 years, if (*a*) eligible to vote at the elections for the Senate, and (*b*) resident for at least 3 years within the Commonwealth	Male adult natural-born or naturalised British subjects	Male natural-born or naturalised British subjects of the age of 30 years or upwards, (*a*) if possessed of a freehold property of the annual value of at least £50 for one year previous to the election, and (*b*) in the case of naturalised subjects if a resident of the State for 10 years
Period for which elected or nominated	6 years	For life	6 years
Allowance to Members ...	£600 each per annum	None	None
Qualification for Franchise	Adult British subjects of either sex who have lived in Australia for 6 months continuously. Aboriginal natives of Australia, Asia, Africa, or the islands of the Pacific, except New Zealand, cannot vote at federal elections unless they have acquired a right to vote at elections for the Lower House of a State Parliament	(Nominated)	Male adult British subjects, if either (*a*) the owner of a freehold of the annual value of £10 or of a leasehold of property rated at £15, or (*b*) a graduate of a British university, matriculated students of Melbourne University, qualified legal and medical practitioners, ministers of religion, certificated schoolmasters, and naval and military officers. Naturalised subjects must be of 3 years' standing, and must have resided in the State for 12 months
2. Legislative Assemblies.			
Number of Members ...	75	90	65
Qualification for Membership	The same as for the Upper House	Male adult British subjects if qualified to vote at an election of members of the Legislative Assembly, unless disqualified under the Constitution Acts or the Federal Elections Act 1900	Male adult natural-born British subjects or aliens naturalised for the period of 5 years, if resident in the State for not less than 2 years
Period for which elected ...	Duration of Parliament, which is limited to 3 years	Duration of Parliament, which is limited to 3 years	Duration of Parliament, which is limited to 3 years
Allowance to Members ...	£600 each per annum	£300 each per annum	£300 each per annum
Qualification for Franchise	The same as for the Upper House	Adult naturalised subjects of either sex, who have resided in the State continuously for one year after naturalisation, and adult natural-born subjects who have resided in the State for a continuous period of 1 year	Male adult natural-born subjects or naturalised for 1 year prior to the 1st January or the 1st July in any year, if (*a*) enrolled as ratepayer, or (*b*) if holding an electors' right and enrolled on the general or supplementary roll

SUMMARY, 1907.

Queensland.	South Australia.	Western Australia.	Tasmania.
43	18	30	18
Male adult natural-born or naturalised British subjects	Male natural-born or naturalised British subjects if (*a*) of the age of 30 years or upwards, and (*b*) if resident in the State for 3 years	Male natural-born or naturalised British subjects of the age of 30 years or upwards, if (*a*) in the case of natural-born subjects, resident in the State for 2 years, and (*b*) in the case of naturalised subjects, if naturalised for 5 years previous to the election and resident in the State during that period	Male natural-born or naturalised British subjects of the age of 30 years or upwards, if qualified to vote at the election for the Legislative Council
For life	6 years	6 years	6 years
None	£200 each per annum	£200 each per annum	£100 each per annum
(Nominated)	Adult British subjects of either sex who are either (*a*) owners of a freehold of the annual value of £50, (*b*) owners of a leasehold rated at £20, with at least 3 years to run or containing a right of purchase, (*c*) occupiers of a dwelling-house rated at £17, (*d*) proprietors of a Crown lease on which they own improvements to the value of £50, or (*e*) ministers of religion, head schoolmasters, post-office or railway station-masters, or head police-station officers. Voters must have been enrolled for 6 months prior to the election	Adult British subjects of either sex who have resided in the State for 6 months, and who either (*a*) own a freehold estate to the value of £100, (*b*) occupy a house or own leasehold property rated at £25, (*c*) hold Crown leases or licenses to the value of not less than £10 per annum, or (*d*) are on the electoral list of a municipality or road-board district in respect of property of the annual value of £25. Aboriginal natives may only acquire the franchise in respect of a freehold qualification	Adult British subjects of either sex who have resided in the State for 12 months, if either (*a*) possessing freehold to the annual value of £10 or leasehold to the value of £30, or (*b*) graduates of a British university, qualified legal or medical practitioners, or naval or military officers
72	42	50	35
All persons qualified and registered to vote at the elections of members of the Legislative Assembly are eligible as members	Any person qualified for the franchise of the House of Assembly is eligible for membership	Male adult British subjects, if resident in the State for 12 months. Naturalised subjects must have been naturalised for 5 years and have resided in the State for 2 years previous to the election	Adult British subjects of either sex, if (*a*) they have resided in the State for 6 months continuously and (*b*) they are enrolled on the electoral lists
Duration of Parliament, which is limited to 3 years	Duration of Parliament, which is limited to 3 years	Duration of Parliament, which is limited to 3 years	Duration of Parliament, which is limited to 3 years
£300 each per annum	£200 each per annum	£200 each per annum	£100 each per annum
Male adult British subjects who either (*a*) have resided for 6 months in an electoral district, (*b*) own freehold estate of the value of £100, (*c*) have occupied a house of the annual value of £10 for at least 6 months, or (*d*) leasehold estate. Aboriginal natives may vote only under the freehold qualification	Adult British subjects of either sex who have been registered on the electoral roll for 6 months. In the Northern Territory only natural-born British subjects and naturalised Europeans or Americans may vote	Adult British subjects of either sex who have resided in the State for 6 months, and who either (*a*) own freehold to the value of £50, (*b*) hold a household or leasehold property to the value of £10 per annum, (*c*) hold a pastoral, agricultural, occupation, or mining lease or license from the Crown to the value of £5 per annum, or (*d*) are registered on the roll of a municipality or roads board. Aboriginals may only be registered in respect of freehold property	Adult British subjects of either sex who have resided in the State for 12 months

2. **The Federal Parliament.**—The Senate consists of thirty-six members, six being returned by each of the original federating States. Members of this chamber are elected for a term of six years, but by a provision in the Constitution a certain number retire at the end of every third year, although they are eligible for re-election. In accordance with the Constitution the total number of members of the House of Representatives must be as nearly as possible double that of the Senate. In the House of Representatives the States are represented on a population basis, and the numbers stand at present as follows:—New South Wales, 27; Victoria, 22; Queensland, 9; South Australia, 7; Western Australia, 5; Tasmania, 5—total, 75. The Constitution provides for a minimum of five members in each original State. Members of the House of Representatives are elected for the duration of the Parliament, which is limited to three years. In elections for Senators each State is counted as a single electorate, but an elaborate scheme of subdivision had to be undertaken in order to provide workable electorates in each State for members of the House of Representatives. Members of both Houses are paid at the rate of £600 per annum.

(i.) *Particulars of Elections.* Since the establishment of the Commonwealth there have been three elections for the Senate and for the House of Representatives. Further information as to the Commonwealth Parliaments since their inception is given on page 38 hereinbefore. Particulars regarding the number of electors enrolled and the number of electors to whom ballot-papers were issued at the last two elections may be found in the tables given hereunder:—

FEDERAL ELECTIONS OF THE 16TH DECEMBER, 1903, AND THE 12TH DECEMBER, 1906.

State.		Electors Enrolled.			Electors to whom Ballot Papers were Issued.			Percentage of Voters to Electors Enrolled.		
		Males.	Fem.	Total.	Males.	Fem.	Total.	Males.	Fem.	Total.
THE SENATE.										
New South Wales	1903	360,285	326,764	687,049	189,877	134,487	324,364	52.70	41.16	47.21
	1906	392,077	345,522	737,599	229,654	151,682	381,336	58.57	43.90	51.70
Victoria ...	1903	302,069	310,403	612,472	171,839	141,648	313,487	56.89	45.63	51.18
	1906	335,886	336,168	672,054	209,252	171,933	381,185	62.30	51.14	56.72
Queensland ...	1903	127,914	99,166	227,080	79,938	44,569	124,507	62.49	44.94	54.83
	1906	150,037	121,072	271,009	79,567	44,972	124,539	53.03	37.14	45.94
South Australia ...	1903	85,947	81,828	167,775	35,736	19,049	54,785	41.58	23.28	32.65
	1906	97,454	95,664	193,118	43,318	27,199	70,517	44.45	28.43	36.51
Western Australia	1903	74,754	42,188	116,942	26,878	6,270	33,148	35.96	14.86	28.35
	1906	91,427	54,046	145,473	37,180	15,532	52,712	40.67	28.74	36.23
Tasmania ...	1903	43,515	38,753	82,268	23,729	13,292	37,021	54.53	34.30	45.00
	1906	47,306	42,903	90,209	29,164	19,715	48,879	61.65	45.95	54.18
Commonwealth	1903	994,484	899,102	1,893,586	527,997	359,315	887,312	53.09	39.96	46.86
	1906	1,114,187	995,375	2,109,562	628,135	431,033	1,059,168	56.38	43.30	50.21
THE HOUSE OF REPRESENTATIVES.										
New South Wales	1903	303,254	274,763	578,017	164,133	118,381	282,514	54.12	43.08	48.88
	1906	363,723	314,777	678,500	216,150	141,227	357,377	59.43	44.87	52.67
Victoria ...	1903	241,134	247,089	488,223	142,460	120,329	262,789	59.08	48.70	53.83
	1906	335,886	336,168	672,054	209,266	171,999	381,265	62.30	51.16	56.73
Queensland ...	1903	114,550	88,375	202,925	74,042	41,689	115,731	64.64	47.17	57.03
	1906	150,037	121,072	271,109	79,540	44,942	124,482	53.01	37.12	45.92
South Australia ...	1903	23,856	25,789	49,645	12,394	7,728	20,122	51.95	29.97	40.53
	1906	42,065	38,578	80,643	19,850	12,669	32,519	47.19	32.84	40.32
Western Australia	1903	41,500	28,324	69,824	16,824	4,409	21,233	40.54	15.57	30.41
	1906	91,427	54,046	145,473	36,976	15,740	52,716	40.44	29.12	36.24
Tasmania ...	1903	43,515	38,753	82,268	23,729	13,284	37,013	54.53	34.28	44.99
	1906	37,779	34,839	72,618	23,753	16,441	40,194	62.87	47.19	55.35
Commonwealth	1903	767,809	703,093	1,470,902	433,582	305,820	739,402	56.47	43.50	50.27
	1906	1,020,917	899,480	1,920,397	585,535	403,018	988,553	57.35	44.81	51.48

In the Senate the figures for the year 1906 shew that ballot-papers were issued to a little more than half the electorate, and are a slight improvement on those for the year 1903, when only about 47 per cent. of the electors visited the polls. Allowing for the various causes which may have prevented those qualified from recording their votes, it cannot be said that the electors of the Commonwealth have, so far, set a high value on the privilege of the franchise. In the elections for the House of Representatives the figures for both years shew an improvement in percentage of voters as compared with the returns for the Senate; nevertheless they cannot be looked upon as satisfactory. In every instance the percentage of female voters is very far below that of the males.

3. **The Parliament of New South Wales.**—The Legislative Council is in this State a nominee chamber, the Legislative Assembly being an elective body. Theoretically the Legislative Council may contain an unlimited number of members, but in practice the number is restricted to between fifty and sixty, the members at the latest available date being fifty-four. Members are appointed by the Governor, acting on the advice of the Executive Council. The tenure of the seat is for life; four-fifths of the members must be persons not holding any paid office under the Crown, but this is not held to include officers of His Majesty's sea or land forces on full or half pay, or retired officers on pensions. The Legislative Assembly consists of ninety members, who hold their seats during the existence of the Parliament to which they are elected. The duration of any single Parliament is limited to three years.

(i.) *Particulars of Elections.* Since the introduction of responsible Government in New South Wales there have been twenty complete Parliaments, the first of which opened on the 22nd May, 1856, and was dissolved on the 19th December, 1857, while the twentieth opened on the 23rd August, 1904, and closed on the 20th August, 1907. The average duration of the Parliaments was two years and five months. The first session of the twenty-first Parliament was opened on the 26th September, 1907.

Particulars of voting at the last five elections but one are given below:—

LEGISLATIVE ASSEMBLY ELECTIONS, NEW SOUTH WALES.

Date of Opening of Parliament.	Electors upon the Roll.	Members Returned.	Members Unopposed.	Contested Electorates.			
				Electors Qualified to Vote.	Votes Recorded.	Percentage of Votes Recorded.	Percentage of Informal Votes.
7th August, 1894 ...	298,817	125	1	254,105	204,246	80.38	1.62
13th „ 1895 ...	267,458	125	8	238,233	153,034	64.24	0.88
16th „ 1898 ...	324,339	125	3	294,481	178,717	60.69	0.92
23rd July, 1901	346,184	125	13	270,861	195,359	72.13	0.79
23rd August, 1904 Males	363,062	90	2	304,396	226,057	74.26	0.59
23rd August, 1904 Females	326,428			262,433	174,538	66.51	

The franchise was extended to women in 1902, and was exercised for the first time at a State election in 1904.

4. **The Parliament of Victoria.**—Both of the Victorian legislative chambers are elective bodies, but there is a considerable difference in the number of members of each House, as well as in the qualifications necessary for members and electors. In the Legislative Council the tenure of the seat is for six years, but one member for each province retires every third year, except in the case of a dissolution, when one half of the newly elected members hold their seats for three years only. Members of the Legislative Assembly are elected for the duration of Parliament, which is limited to three years. An elector for the Legislative Assembly may only vote once, plurality of voting having been abolished in 1899; an elector, however, qualified in more than one district, may select that for which he desires to record his vote.

(i.) *Particulars of Elections.* Since the introduction of responsible government in Victoria there have been twenty complete Parliaments, the first of which was opened on the 21st November, 1856, and closed on the 9th August, 1859, while the twentieth opened on the 29th June, 1904, and closed on the 21st February, 1907. The first session of the twenty-first Parliament opened on the 9th July, 1907.

Statistics regarding the last three elections will be found below:—

STATISTICS OF VICTORIAN ELECTIONS, 1902 TO 1907.

Year.	Legislative Council.				Legislative Assembly.			
	Electors on Roll.	Electors in Contested Districts.	Voters in Contested Districts	Percentage.	Electors on Roll.	Electors in Contested Districts.	Voters in Contested Districts.	Percentage.
1902 ...	134,087	*	*	*	290,241	216,063	141,471	65.47
1904 ...	172,495	104,843	61,382	58.54	264,709	223,600	140,127	62.66
1907 ...	180,738	78,512	27,152	34.58	260,787	191,131	117,098	61.26

* Not contested.

As the table shews, the proportion of voters for the Legislative Council is considerably less than that for the Lower House.

5. **The Parliament of Queensland.**—No limit is set by the Constitution Act to the number of members of the Legislative Council of Queensland, the total at the latest available date being forty-three. Members are appointed by the State Governor, and it is provided that not less than four-fifths of the members must consist of persons not holding any office under the Crown, except officers of His Majesty's sea or land forces on full or half-pay, or retired officers on pensions. The members are nominated for life. The Legislative Assembly is composed of seventy-two members, returned from sixty-one electorates, eleven electorates returning two members each, the others being single electorates.

(i.) *Particulars of Elections.* Since the establishment of responsible government in Queensland there have been sixteen complete Parliaments, the first of which opened on the 29th May, 1860, and dissolved on the 20th May, 1863, while the sixteenth parliament opened on the 23rd July, 1907, and closed on the 10th December, 1907. The seventeenth parliament is now in session. Statistics regarding the elections of 1902, 1904, and 1907 are given below:—

ELECTIONS FOR QUEENSLAND LEGISLATIVE ASSEMBLY.

Year.	Number of Seats.	Number of Candidates Nominated.	Candidates sent to the Poll.	Electors Enrolled.			Electors who Voted.			Percentage of Electors Voting in Contested Electorates.		
				Males.	Females	Total.	Males.	Females	Total.	Males.	Females	Total.
1902	72	159	154	108,548	—	108.548	80,076	—	80,076	76.88	—	78.88
1904	72	140	117	103,943	—	103,943	60,265	—	60,265	74.16	—	74.16
1907	72	185	179	125,140	95,049	220,189	—	—	152,049	73.42	68.64	71.61

The election of 1907 was the first State election in Queensland at which women voted, the privilege being conferred under Act 5 Edw. VII., No. 1. Some of the returns did not separate the sexes in the figures respecting the number of electors who voted, and the percentage of males and females was therefore calculated on the total returns where the subdivision was made.

6. **Parliament of South Australia.**—In this State there is a Legislative Council composed of eighteen members and a House of Assembly with forty-two members, both chambers being elective.

(i.) *Particulars of Elections.* Since the inauguration of responsible government in South Australia there have been eighteen complete Parliaments, the first of which was opened on the 22nd April, 1857, and dissolved on the 1st September, 1859, while the eighteenth was opened on the 20th July, 1905, and terminated on the 10th October, 1906. The first session of the nineteenth Parliament opened on the 30th November, 1906. Particulars of voting at the last three elections are given below :—

PARLIAMENTARY ELECTIONS IN SOUTH AUSTRALIA.

Year.	Electors on Rolls.			Electors Who Voted.			Percentage of Electors Voting.	
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.
LEGISLATIVE COUNCIL.								
1900 ...	38,688	9,854	48,542	21,403	3,907	25,310	55.32	39.65
1902 ...	38,413	13,496	51,909	29,978	7,940	37,918	78.04	58.83
1905 ...	39,011	13,873	52,884	28,820	8,328	37,148	73.88	60.03
LEGISLATIVE ASSEMBLY.								
1902 ...	77,147	72,030	149,177	53,471	36,545	90,016	62.14	49.22
1905 ...	95,396	92,249	187,645	64,330	50,246	114,576	67.43	54.47
1906 ...	96,724	93,438	190,162	60,109	45,997	106,106	69.31	50.73

The proportions of votes recorded to total persons entitled to vote in each of the three years given above were as follows:—Legislative Council, 52.14, 73.05, and 70.24 per cent.; and Legislative Assembly, 55.80, 61.06, and 60.34 per cent.

It is interesting to note that South Australia was the first of the States to grant women's suffrage (under Act No. 16 of 1894), the franchise being exercised for the first time at the Legislative Assembly election on the 25th April, 1896.

7. **The Parliament of Western Australia.**—In this State both chambers are elective. For the Legislative Council there are thirty members, each of the ten electorates returning three members, while the Legislative Assembly is composed of fifty members, one member being returned by each of the fifty electoral divisions. At the expiration of two years from the date of election to a seat in the Legislative Council, and every two years thereafter, the senior member for the time being for each province retires. Seniority is determined (*a*) by date of election, (*b*) if two or more members are elected in the same day, then the senior is the one who polled the least number of votes, (*c*) if the election be uncontested, or in case of an equality of votes, then the seniority is determined by the alphabetical precedence of surnames and, if necessary, Christian names. Members of the Legislative Assembly are elected for three years.

(i.) *Particulars of Elections.* Since the establishment of responsible government in Western Australia there have been five complete parliaments, the first of which was opened on the 30th December, 1890, and was dissolved on the 22nd March, 1893, while the fifth Parliament was opened on the 28th July, 1904, and dissolved on the 5th October, 1905. The first session of the sixth Parliament commenced on the 23rd November, 1905. Particulars relating to the last three parliamentary elections are given in the table below. The figures refer to electors for the Assembly only, no returns being published with regard to voting at Council elections :—

ELECTIONS FOR LEGISLATIVE ASSEMBLY, WESTERN AUSTRALIA.

Year.	Electors on the Roll.			In Contested Districts.			Votes Recorded.			Proportion of Electors Voting.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
1901	74,874	16,648	91,522	67,967	14,775	82,742	29,832	8,255	38,077	44	56	46
1904	108,861	54,965	163,826	88,524	49,791	138,315	43,285	23,500	66,785	49	47	48
1905	79,025	42,697	121,722	65,296	36,706	102,002	33,482	19,435	52,917	51	53	52

8. **The Tasmanian Parliament.**—In Tasmania there are two legislative chambers—the Legislative Council and the House of Assembly, both bodies being elective. The Council consists of eighteen members, returned from fifteen districts, Hobart returning three, Launceston two, and the remaining thirteen districts sending one member each. At the present time there are thirty-five House of Assembly districts, each district returning one member, but, in accordance with the Constitution Amendment Act of 1906, upon the expiration of the present Assembly, either by dissolution or by effluxion of time, there will be five House of Assembly districts (*i.e.*, the Commonwealth electoral districts), each district returning six members. The last-elected Parliament will not expire till March, 1909, so that, unless the House is previously dissolved, the existing electoral system will remain in force until that date.

(i.) *Particulars of Elections.* Particulars of the voting at the last three elections are given hereunder. The figures refer to elections for the Assembly only, as, owing to the conditions of tenure of seat in the Legislative Council, only a very small proportion of the districts conduct elections each year:—

ELECTIONS, HOUSE OF ASSEMBLY, TASMANIA.

Year.	Electors on Roll.		Electors in Contested Districts.		Votes Recorded.		Percentage of Electors Voting.	
	Males	Females.	Males.	Females.	Males.	Females.	Males.	Females.
1900 ...	39,002	...	29,022	...	18,872	...	65.02	...
*1903 ...	43,999	...	40,267	...	23,766	...	59.87	...
†1906 ...	47,400	41,629	37,120	33,415	23,128	17,194	62.30	51.46

* Manhood suffrage, Act 64 Vic., No. 5. † Universal adult suffrage, Act 3 Edward VII., No. 13.

SECTION XXVI.

LOCAL GOVERNMENT.

§ 1. Introduction.

1. **Systems of Local Government.**—In all civilised nations, whatever the previous course of their constitutional history, the persistent and rapid growth of the functions of the central Government, with repeated assumptions of new and onerous duties and responsibilities, have rendered some attempts at decentralisation and some form of local government essential. Without such a relief national administration could be carried on with success only with great difficulty, if at all. Experience, ancient and modern alike, has demonstrated that a completely centralised bureaucracy—that is, a body of officials working from a single centre and responsible only to itself—cannot carry on indefinitely the administration of a large country; such a body tends to ignore the varieties of local conditions, to become stereotyped in its ideas and methods, and sooner or later breakdown is inevitable. There are two possible policies which a Legislature may adopt towards local authorities apart from the imposition of compulsory duties upon them. There is first (*a*) the grant of general power to all local bodies of a particular class—that is, the Legislature may establish, a set of authorities and empower them to do anything which in their judgment will tend to promote the satisfactory administration and general well-being of the areas under their control, so long as any particular powers which they propose to use are not expressly prohibited or reserved to other authorities. But as this liberty might easily in some cases be abused, there is necessarily the restriction, of greater or less extent according to the country and the nature of the authorities in question, that the actual exercise of these general powers shall be subject to the approval of an administrative department of the central Government. Or, on the other hand, the Legislature may (*b*) grant only specific powers to local bodies—that is, may give them permission to do all or any of a number of enumerated things, with or without the approval of the central departments, and in this case nothing further can be done by the local body unless permitted by fresh legislative enactments. In a general way it may be said that legislation on the continent of Europe has ordinarily followed the first of these two methods, and has given to the local self-governing communities power to do anything for which they can get administrative approval; while in the Commonwealth, as well as in Great Britain and in the United States, the practice has been the opposite one—local authorities are empowered to do only specified things; but in order, in spite of this, to allow free play to local initiative and enterprise, parliamentary procedure permits of local authorities being able to obtain additional powers for particular works or undertakings by means of special Acts. This difference between the Australian or British and continental systems has two very important results.

(i.) *Difference between Australian and Continental Systems.* (*a*) The first important result of this difference is that in Australia, England and the United States the enterprise and activity of local authorities depend upon the temper and ideas of Parliament—that is to say, upon the elected representatives of the nation; whilst throughout a large part of the continent of Europe the controlling influence is ordinarily exercised by a bureaucracy whose opinion upon the matters in question may or may not be coincident with the majority of the electorate. The result is that in Australia it is the business of the State Parliaments to determine what powers are to be conferred upon local authorities, while, ordinarily, under the continental systems the administrative bodies have to regulate what the local authorities may or may not do. The efficiency of such continental systems depends almost entirely upon the character of the controlling bureaucracy, although it is true that the legal powers of a municipality under that system might be very much wider than those of a municipal council in Australia. If the bureaucracy is enterprising and ready to encourage and aid in every way the growth of local action and experiment—as it is in Prussia—then there is the largest scope for municipal development; but if, as in France, the bureaucracy is conservative in its ideas and slow to move, the action of local authorities remains cramped and limited.

(*b*) The second important result of the difference between the Australian and continental systems is that in all matters entrusted to them local authorities in Australia consider that their duty is to carry out the law according to the will of, and in the manner desired by the ratepayers of their local areas, subject generally to the supervision of the central Government, whereas on the continent of Europe local authorities regard themselves normally as bodies appointed to carry out, within their respective localities, the will of the central Government, even in such matters as are of purely local importance. Local authorities under the continental systems are responsible to the central Government and are subject to administrative control, whilst in Australia municipal councils, so long as they do not infringe the Acts under which they are constituted or which they have to administer, are responsible only to the ratepayers of their respective localities.

(ii.) *Various Systems in the Several States of the Commonwealth.* In all the States of the Commonwealth Acts have now been passed providing for comprehensive schemes for the decentralisation of power by the constitution of various forms of local authorities to deal with a large variety of subjects and matters. The general policy of the Legislatures towards local authorities in Australia has already been pointed out. Generally speaking, these authorities exercise their powers under enactments of two kinds. (*a*) There are, first, what may be called constituent Acts, which create the various classes of local bodies and arm them with the powers necessary for the fulfilment of the duties intended to be discharged by them, and there are, secondly (*b*) general Acts dealing with one subject, or group of subjects, of administration—such as the Public Health Acts—and giving power to the local authorities for that particular service. Although the Acts controlling local government in the several States vary considerably in detail, especially as regards the election of councillors and presiding officers, method of valuation, and rating powers, there is great similarity between the powers and duties conferred and imposed upon local authorities in the various States; these powers and duties are many and varied. As a rule the municipal council is the highway authority, being responsible for all the roads within its area and the up-keep of all bridges; it is a public health authority; it supervises the sanitary work, the water supply, and the lighting of its area, and for these and for other purposes may appoint officers; it administers the Acts relating to the sale of foods and drugs, the slaughter and diseases of animals, weights and measures, and river pollution; it may establish hospitals, public recreation grounds. libraries, and museums, and may provide asylums and support charitable institutions; it may make provision for preventing fires and floods; it administers the municipal property, makes by-laws with regard to a large variety of things and matters, and may acquire other powers by petition to the Governor. The councils are elected by the ratepayers, and seek only to carry out the wishes of the electorate, subject to the general supervision of the central Governments.

(iii.) *Systems on the Continent of Europe.* On the continent of Europe a careful distinction is generally drawn between those internal affairs in which the central Government is thought to be directly concerned and those which are held to be primarily of only local interest. In Prussia, for instance, the former includes, besides the army, State taxes and domains, ecclesiastical affairs, police, and the general supervision of local authorities, while to the localities are left roads, poor relief, and a number of miscellaneous matters. The work of the central Government is deconcentrated, that is to say, the country is divided into districts, in each of which there is a delegation of the central authority, doing its work and thereby decreasing the pressure upon the head offices. The executive agents in each locality are elected by the inhabitants, but they are also the representatives of the central Government, and as such they are members of the bureaucracy and are under its control, with the consequence that they look to the central Government for guidance and direction in regard to local affairs. Local government is in fact weak; it is not so much the exercise of the will of a locality by the central power, as the exercise of the will of the latter by the locality. The system of deconcentrated centralised control as carried out in Prussia has, however, some distinct advantages.

(*a*) In the first place the duties of supervising the actions of a large number of local authorities do not rest only upon a comparatively small number of officials at the seat of Government, but are carried out by delegations in all parts of the country, which are able to acquire a more intimate knowledge of local requirements and conditions.

(*b*) Secondly, the supervision is not only by Government officials, but by responsible and experienced persons elected by the inhabitants and who command local confidence. The general results are that, firstly, the staff at the central offices is relieved of much detailed work, and, secondly, that the control of the localities is rendered much less bureaucratic.

2. **Early History of Local Government in Australia.**—Before the more comprehensive systems of self-government were first provided for in the several States various enactments had from time to time been passed and amended in order to satisfy the growing demand for local government which asserted itself as one of the primary results of the spread of education and increase of population. In the latter part of the year 1839 the first municipal law was passed in South Australia, which was thus the birthplace of local government in the Commonwealth. On the 31st October, 1840, the principles of self-government were practically adopted in Adelaide by the election of a mayor and council. In 1842 the Sydney City Incorporation Act was passed by the New South Wales Government; under this Act the city was divided into six wards, and resident occupiers or owners of houses, warehouses, or shops within a radius of seven miles were duly enrolled as citizens and entitled to vote at the elections of councillors, the number of which was fixed at twenty-four. A city fund was established and rates levied. The duties of the council were to construct and maintain streets, sewers, and waterworks, to light the streets, and to make by-laws for the general good rule and government of the city. In the same year, 1842, Melbourne was incorporated as a town by special Act, and as a city in 1847, while Geelong was incorporated in 1849. The Acts by which Sydney and Melbourne were incorporated contained no provision for the extension of the municipal principle to other localities, but in 1842 an Imperial Act was passed under which the Governor of New South Wales was empowered to incorporate by letters patent every county or any part of a county to form districts for the purpose of local government. In the following year the districts of Appin, Campbelltown, Camden, Narellan, and Picton, in New South Wales, were incorporated under one county district council, while later in the same year Appin and Campbelltown were constituted as a separate district under the control of six councillors. In 1844 the Sydney City Incorporation Act was amended; by this time the number of county district councils had increased to eight, and these, in conjunction with the municipal council of Sydney and the Road Trusts, which were generally created by Special Acts, constituted the whole of the local government system in New South Wales prior to 1858. The Imperial Act of 1850, under which the State of Victoria was granted responsible government, provided for the division of the State into districts under the government of local councils. In all the States of the Commonwealth systems of local government have been provided for; in some of the States, such as Victoria, practically the whole area of the State has for some years been divided into districts for the purposes of self-government, while in others, more especially in New South Wales, a general system of extending the advantages of

local government throughout the more settled parts of the country has only recently been provided. In other States systems of local government which have been in force for some years have, as is only to be expected, made comparatively slow progress owing to the small population scattered over such large areas. Taking, however, into consideration the benefits which must accrue, especially in a country of great distances, from the establishment of suitable systems of local government, and judging by the success of similar institutions in other countries, there is every reason to expect that, as population increases and settlement progresses, the people of Australia will take fuller advantage of the systems provided.

§ 2. New South Wales.

1. **Development of Local Government Systems.**—In the year 1858 the Municipalities Act, the first important measure with regard to general local government in New South Wales, was passed. Under this Act provision was made for the incorporation of any town or rural district as a municipality upon presentation to the Governor of a petition signed by at least fifty of the prospective ratepayers, and containing a larger number of signatures than those attached to any counter petition. The members of the council were elected by the ratepayers, and the chairman was chosen by the councillors from their own number. The duties of the council were to abate and remove nuisances; to make by-laws for the regulation of their own proceedings and for the general good government of the town; to control all roads, bridges, ferries, and wharves; to establish hospitals, asylums, libraries, and gardens; and to establish tolls and rents for the use of markets, bridges, wharves, and jetties within and belonging to the municipality. The general rate was not to exceed one shilling in the pound, but a special rate for water supply, sewerage, and street lighting could be levied. Government endowment was provided for, by way of subsidies on the amount collected from rates, over a period of fifteen years. In all thirty-five districts were incorporated under this Act, and these districts, with the exception of Cook, which was united to Camperdown in 1870, and East St. Leonards, subsequently joined to St. Leonards, still exist, though the boundaries of most of them have since been changed.

(i.) *The Municipalities Act 1867.* The Act of 1858 was repealed in 1867 by the Municipalities Act of that year. Under the provisions of the latter Act the thirty-five existing municipalities were to continue their existence under the designation of boroughs, and all municipalities created in the future were to be classified either as (*a*) boroughs, or (*b*) municipal districts.

(*a*) ***Boroughs*** could consist of any city, town, or suburb of the metropolis, or of any populous country district, but every borough had to have a population of not less than 1000 and had to contain an area of not more than nine square miles, of which no part was more than six miles distant from any other part.

(*b*) ***Municipal districts*** could comprise any part of the colony not containing a borough, but had to include an area of not more than fifty square miles, with a population of not less than 500 souls.

The duties and powers of the councils were extended and defined, while the maximum rate remained as before. This Act still left it optional for any district to become constituted as a municipality, with the consequence that only a small proportion of the State was incorporated under its provisions.

(ii.) *Division of the State into Shires, 1905.* The Act of 1867 was amended from time to time during the succeeding thirty years until the whole of the Acts—sixteen in number—were repealed by the consolidating Act of 1897. This Act did not alter the chief features of previous Acts, and still retained the voluntary principle of incorporation, which was not conducive to the adoption of a general system of local government, because so long as the central Government continued to construct and pay for local works, it was natural that the inhabitants benefited would be willing to deny themselves the advantages of self-government. The law on the subject remained in an admittedly unsatisfactory condition for several years, and, though various measures were introduced into Parliament for its amendment, it was not until the year 1905, when the Shires Act was passed, that a comprehensive scheme of local government was extended to the greater part of the State.

(a) *The Shires Act 1905* divides the whole State, with the exception of existing municipalities, the western division, Lord Howe Island, the islands in Port Jackson, and the Quarantine Station of Port Jackson, into shires, which were themselves subdivided into ridings, each riding having equal representation in the council, and were classified according to their extent and probable revenue and expenditure. A sum of not less than £150,000 was made payable annually out of the consolidated revenue for the endowment of the shires, the amount payable to each shire being apportioned according to the class to which it belonged and to the proceeds of the general rates received during the next preceding year. An important feature of the Act was that the rates were to be charged on the unimproved value of the land, instead of on the annual rental; the rate to be levied was not to be less than one penny, nor more than twopence in the pound, and the minimum rate in respect of any portion of land was fixed at two shillings and sixpence. Another important provision of the Act was that as soon as a rate was imposed by a council, the operation of the Land Tax Act was suspended. The councils were vested with wide general powers and could acquire additional powers by resolution of a majority of the council followed by an application by the President on behalf of the council to the Governor.

(b) *The Local Government Extension Act 1906* amended and consolidated the law relating to municipalities and extended the principles of the Shires Act to municipalities. Provision was also made whereby the Governor was authorised to proclaim as a city any municipality which had, during the previous five years, a population of at least 20,000 persons and a revenue of at least £20,000, and which formed an independent centre of population.

(c) *The Local Government Act 1906.* Towards the close of the year 1906 the Local Government Act, which deals comprehensively with both shires and municipalities, was passed; by this Act both the Shires Act 1905 and the Local Government Extension Act 1906 are repealed, and their provisions are amended and consolidated.

2. **Local Government Systems now in Operation.**—The law relating to local government in New South Wales is now contained in the Act of 1906 just referred to. The Local Government Commissioners issued an *interim* report in July, 1905, proposing to divide the State into 132 shires, the unimproved value of which was £67,131,466; by the final report, issued in January, 1906, the establishment of 134 shires and the constitution of thirty-two new municipalities were recommended. These recommendations have since been carried into effect.

(i.) *Areas Incorporated.* Prior to this date the total area incorporated formed a very small part of the whole area of the State, as may be seen in the following statement:—

AREAS INCORPORATED IN NEW SOUTH WALES, 1860 TO 1906.

Year	1860.	1870.	1880.	1890.	1900.	1906.
Area incorporated—Sq. miles ...	409	649	1,482	2,387	2,763	2,830

Total area of State (exclusive of Lord Howe Island), 310,367 square miles.

The areas incorporated in 1906 in each of the three territorial divisions of the State were as follows:—

DISTRIBUTION OF INCORPORATED AREAS, 1906.

Division.		Incorporated Area.	Unincorporated Area.	Total Area.
Eastern ...	... Sq. miles	1,977	93,742	95,719
Central ...	... „	571	88,579	89,150
Western ...	... „	282	125,216	125,498
Total ...	...	2,830	307,537	*310,367

* Total area of State, exclusive of Lord Howe Island, the area of which is 5 square miles.

Under the Shires Act 1905 and the Local Government Extension Act 1906 the whole of the eastern and central divisions, amounting in all to 184,869 square miles, were incorporated, either as shires or as municipalities, which are now administered under the Local Government Act of 1906. The provision of the Shires Act as to the incorporation of cities is retained, and under this provision the municipality of Broken Hill was proclaimed a city in 1907.

(i.) *General.* This Act came into operation on the 1st January, 1907; it provided for the continuation of existing shires and municipalities, for the creation of new ones, and for their reconstitution by uniting, dividing, altering, or converting areas. Each shire is divided into three ridings, and each municipality may be divided into wards by petition of the council or of a majority of the ratepayers to the Governor. The councils consist in the case of shires of either six or nine councillors, and in the case of municipalities of from six to twelve aldermen, except in the case of the union of two or more municipalities, when the Governor may determine that the council of the united areas shall consist of any number from twelve to eighteen aldermen. All occupiers of rateable property of a yearly value of at least £5 who have been in occupation for at least three months, of either sex, who are either natural-born or naturalised British subjects, of the age of twenty-one years and upwards, are entitled to be registered on the electors' roll, and any male person so enrolled is qualified to be elected as a councillor or alderman, unless he is otherwise ineligible.

(ii.) *Functions of Councils.* On the constitution of a shire or municipality the councils may exercise any of the following powers:—The construction and maintenance of all public places, except those vested in the Railway Commissioners or other public bodies or trustees, and except national works; lighting of, and controlling the traffic in streets and roads; prevention of fires and floods; the administration of the Public Watering Places Act 1900 and the Impounding Act 1898, and certain parts of the Police Offences Act 1901, the Public Health Act 1902, and the Cattle Slaughtering and Diseased Animals and Meat Act 1902. Other powers and duties, such as the construction of drainage and water supply systems without reticulation, the care and management of parks and commons, and the licensing of hawkers and public vehicles, are conferred and imposed upon municipal councils, while these same powers and duties may be acquired by shire councils by resolution of the council followed by application to the Governor.

(*a*) *Acquisition of Further Powers.* Further powers may also be acquired either by shires or by municipalities if the council decide that they are necessary for the good government of the locality; these are the administration of the Public Gates Act 1901, and the Native Dog Destruction Act 1901; water supply by reticulation; the maintenance of passenger ferries, of fire brigades, of municipal buildings, of cattle-yards and abattoirs, of markets, parks, and recreation grounds, of refuse destructors, of cemeteries and public baths; the manufacture and supply of gas, electricity, and hydraulic or other power; the regulation and control of theatres, public halls, and lodging houses; the establishment and management of public libraries, art galleries, museums, and public bands; the regulation and supervision of buildings and balconies; of the sale of fish and meat, and the suppression of nuisances caused by the emission of smoke or vapour. These powers may be acquired by a resolution passed by an absolute majority of the council followed by an application in the prescribed form to the Governor. On receipt of a petition signed by not less than fifty, or if there be less than 300 ratepayers on the roll, by one-sixth of the ratepayers, the Governor may direct that a poll be taken as to whether all or any of the powers applied for shall be conferred on the council.

(b) *Appointment of Executive Officers.* Provision is made in the Act for the appointment of officers and servants, such as shire engineers, municipal clerks, and sanitary inspectors, and also for the acquisition by councils of land or buildings either by agreement or compulsorily, for which purpose the provisions of the Public Works Act 1900 are incorporated.

(iii.) *Rates and Ratable Property.* All land is ratable except the following:—Commons, public parks, and public reserves not held under lease or license; cemeteries, public hospitals, benevolent institutions, and buildings used exclusively for public charitable purposes; churches and free public libraries; unoccupied Crown lands; lands vested in the University of Sydney occupied and used solely for the purposes of education; land vested in the Chief Commissioner for Railways and Tramways and actually used for the purposes of the Government railways or tramways. Rates levied by a council may be of four kinds, namely, general, special, local, or loan rates.

(a) *General Rates* are levied on the unimproved value at a rate of not less than one penny nor more than twopence per pound, but if the minimum rate be more than sufficient to meet the requirements of the council it may be further reduced at the discretion of the Governor. A council of a municipality which has levied a general rate of not less than one penny on the unimproved value may impose such additional rate as may be required either on the improved or the unimproved value.

(b) *Special, Local, and Loan Rates* may also be imposed either on the improved or the unimproved value at the option of the council, but in the case of special and local rates a poll may be demanded by the ratepayers as to whether the rate shall be imposed or not. Rates on the unimproved value of land may also be levied for the purposes of the Country Towns Water Supply and Sewerage Acts 1880-1905, which provide for the construction by the Government of waterworks and sewerage systems in municipalities which are outside the areas served by the Metropolitan and Hunter River Boards. The cost becomes a charge against the municipality, carrying interest at the rate of 4 per cent., and repayable by annual instalments over a period of not more than 100 years.

(iv.) *Endowment.* The amount of and the conditions as to the endowment of shires are similar to those of the Shires Act. It is also enacted that all municipalities not receiving statutory endowment under any Act thereby repealed shall, upon the result of investigations made into their administration and financial necessities, be entitled to a sum not exceeding three shillings and fourpence in the pound on the general rate collected; but if the revenues are sufficient to meet the reasonable requirements of the corporations under proper management no endowment will be paid.

(iv.) *Borrowing Powers and other Provisions.* A council of a municipality is authorised to borrow up to 10 per cent. of the unimproved capital value, and all money so borrowed is a charge upon the revenue of the council. If a council desire that any proposed loan should be guaranteed by the Government application must be made to the Treasurer. who may either refuse or recommend the guarantee. Both shires and municipalities may temporarily borrow in any year an amount not exceeding one-third of the estimated revenue to be received from rates if the consent of the Minister shall have been first obtained. Auditors are appointed by the councils, and Government examiners are appointed to inspect the accounts of the councils. A defaulting area is defined to be an area in which a sufficient number of councillors have not been elected to form a quorum, or in which the requirements of the Act as to the levying of a general rate have not been carried out, or in which the council has ceased for six months to exercise its functions. The Governor is authorised to appoint an administrator for a defaulting area.

3. **Annual and Capital Improved Value of Ratable Property, 1901 to 1906.**—The following table shews the annual and capital improved values of ratable property in municipalities for each year from 1901 to 1906, inclusive:—

NEW SOUTH WALES.—RATABLE PROPERTY IN MUNICIPALITIES. ANNUAL AND CAPITAL IMPROVED VALUES, 1901 TO 1906.

Year ended February.*	Sydney and Suburbs.		Country.		Total.	
	Annual Value.	Capital Value.	Annual Value.	Capital Value.	Annual Value.	Capital Value.
	£	£	£	£	£	£
1901 ...	5,069,630	88,116,600	2,836,130	36,429,600	7,905,760	124,546,200
1902 ...	5,188,700	90,060,600	2,920,500	37,936,300	8,109,200	127,996,900
1903 ...	5,455,270	93,413,300	2,624,890	36,606,500	8,080,160	130,019,800
1904 ...	5,669,670	96,171,600	2,681,750	38,046,700	8,351,420	134,218,300
1905 ...	5,866,860	98,857,900	2,675,200	38,355,800	8,542,060	137,213,700
1906 ...	5,974,970	101,090,900	2,741,390	39,223,700	8,716,360	140,314,600

* The municipal year of the city of Sydney begins on the 1st January; the returns for this city are, therefore, included as up to the 31st December in the preceding year. In other municipalities the financial year begins on the first Tuesday in February.

4. **Unimproved Capital Value, Area, Population. and Rates Levied, 1901 to 1906.**—The following table shews the unimproved capital value, the area, population, number of buildings, and amount of rates levied in municipalities for each year from 1901 to 1906, inclusive:—

NEW SOUTH WALES.—UNIMPROVED CAPITAL VALUE, AREA, POPULATION, NUMBER OF BUILDINGS, AND TOTAL RATES LEVIED IN MUNICIPALITIES, 1901 TO 1906.

Year ended February.*	Sydney and Suburbs.					Country.				
	Unimproved Capital Value.	Area.	Population.	Number of Buildings.	Total Rates Levied.	Unimproved Capital Value.	Area.	Population.	Number of Buildings.	Total Rates Levied.
	£	Acres.	No.	No.	£	£	Acres.	No.	No.	£
1901 ...	39,791,410	91,220	†487,900	†94,907	277,457	13,760,215	1,732,302	371,330	73,862	127,564
1902 ...	39,781,410		†487,900	†94,907	333,065	13,916,015	†1,711,312	†372,218	74,012	131,570
1903 ...	39,791,410		516,180	99,125	377,016	13,942,015	1,711,312	379,430	79,141	174,900
1904 ...	39,791,410		514,750	102,061	382,509	14,753,253	1,719,612	386,610	79,712	178,249
1905 ...	39,791,410		512,500	105,336	396,268	14,753,253	1,719,612	391,370	81,506	188,929
1906 ...	39,791,410		523,530	107,922	404,332	14,875,612	1,719,692	396,820	83,075	191,480

* See footnote to preceding table. † Census, March, 1901.

5. **Revenue and Expenditure, Assets and Liabilities of Municipalities, 1901 to 1906.**—The subjoined table shews the total receipts and disbursements, and also the total assets and liabilities of the municipalities for the years 1901 to 1906, inclusive:—

NEW SOUTH WALES.—REVENUE AND EXPENDITURE, AND ASSETS AND LIABILITIES OF MUNICIPALITIES, 1901 TO 1906.

Year ended Feb.*	Sydney and Suburbs.				Country.			
	Revenue.	Ex'pndit're.	Assets.	Liabilities	Revenue.	Exp'ndit're.	Assets.	Liabilities.
	£	£	£	£	£	£	£	£
1901	675,631	560,586	2,476,354	2,417,642	377,751	367,416	1,326,432	674,673
1902	563,690	555,103	2,464,662	2,401,643	381,298	360,974	1,393,353	672,641
1903	685,751	613,103	2,489,917	2,427,873	372,097	390,473	1,378,472	694,560
1904	705,443	737,175	2,437,589	2,428,732	374,149	373,112	1,436,278	678,491
1905	616.292	639,445	2,421,023	2,555,732	378,107	379,781	1,508,237	693,667
1906	569,255	591,166	2,539,920	2,637,990	340,482	356,067	1,528,915	711,001

* See footnote to preceding table but one.

6. **Expenditure by General Government on Local Works, 1901 to 1906.**—Since the year 1860 the Government of New South Wales had expended £40,180,000 on works of a purely local character, not including the amount spent on school buildings and on works of national importance. Of this sum £26,806,500 was spent in country districts, and £13,374.500 in the metropolis. The new arrangements introduced by the Local Govern-Act 1906 will not necessarily put an end to the direct expenditure on works of local interest by the central Government. The subjoined table shews the total amount so expended and the amount per head of population during each financial year from 1901 to 1906, inclusive, as well as the total amount up to the 30th June, 1900 :—

EXPENDITURE BY CENTRAL GOVERNMENT ON LOCAL WORKS, 1901 TO 1906.

Year ended 30th June—	Country Districts.		Metropolitan District.		Total.	
	Expenditure.	Per Head of Estimated Population.	Expenditure.	Per Head of Estimated Population.	Expenditure.	Per Head of Estimated Population.
	£	£ s. d.	£	£ s. d.	£	£ s. d.
1860 to 1900	22,245,400	...	11,184,000	...	33,429,400	...
1901 ...	1,061,600	1 4 6	604,400	1 4 9	1,666,000	1 4 7
1902 ...	1,135,800	1 5 6	535,600	1 1 4	1,671,400	1 4 0
1903 ...	839,700	1 0 0	509,400	0 18 8	1,349,100	0 19 2
1904 ...	579,400	0 12 7	189,000	0 7 5	768,400	0 10 9
1905 ...	456,800	0 9 8	184,500	0 7 1	641,300	0 8 9
1906 ...	487,800	0 10 1	167,600	0 6 4	655,400	0 8 9
Total ...	26,806,500	...	13,374,500	...	40,181,000	...

Out of the total metropolitan expenditure £9,347,800 was spent on tramways, water supply, and sewerage works, which are sources of revenue, while in the country districts the cost of similar works totalled £2,268,300.

7. **Sydney Metropolitan Board of Water Supply and Sewerage.**—Prior to the year 1888 the main water supply and sewerage systems of Sydney and suburbs were under the control of the City Corporation, while several of the suburban councils had constructed local systems. For some years, however, it had been recognised that owing to the great increase in the population and size of the metropolitan area the water supply was inadequate and the sewerage system antiquated and inefficient. In 1867 a Royal Commission had been appointed to enquire into and report upon various schemes for supplying water to the city and suburbs, and in 1869 a report was sent in recommending the adoption of what is known as the "Upper Nepean Scheme." Another commission was appointed in 1875 to investigate different proposed sewerage systems, and two years later a report was presented containing certain recommendations which form the basis of the present system. After considerable discussion and further investigation an Act was passed in 1880 autho-

rising the schemes recommended by the two commissions being carried out. In the year 1888 the works had so far progressed that the Government, with the object of placing the administration of both water supply and sewerage systems throughout the county of Cumberland under the control of an independent body, passed an Act authorising the establishment of the Metropolitan Board of Water Supply and Sewerage. This Board consists of seven members, three of whom are appointed by the Government, two by the City Council, and two by the suburban and country municipalities in the county of Cumberland. The Board is under the general supervision of the Minister for Works—a provision considered necessary since the loan expenditure of the Board forms part of the public debt of the State.

8. **Metropolitan Water Supply.**—In the year 1850 authority was given by the Legislative Council to the City Corporation to construct water and sewerage works. Under this authority a water supply scheme was adopted and carried out, at a cost of nearly £1,750,000, by which the waters of the streams draining into Botany Bay were intercepted and pumped into three reservoirs. This system has now been superseded by the "Upper Nepean Scheme" referred to above, the management of which was transferred to the Metropolitan Board of Water Supply and Sewerage in May, 1888.

(i.) *The Cataract and Prospect Dams.* A work of great importance and magnitude in connection with the Sydney water supply—the Cataract dam—was completed in 1907. Prior to the construction of this dam, the system had been weak in the matter of storage, the only reservoir of any importance being that at Prospect, which was formed by the construction of an earthen dam completed in 1890, and which contains a supply available by gravitation of 5,446,000,000 gallons of water. The Prospect reservoir is supplied from the unstored waters of the Nepean, Cataract, and Cordeaux rivers by means of tunnels and conduits capable of carrying 150,000,000 gallons a day; the combined catchment area of the three rivers extends to an area of 354 square miles, and is favourably situated with regard to the coastal rainfall. The whole of this area has been acquired by the Crown, and every precaution is exercised to guard against pollution of the supply. It was found, however, in 1902—almost the direst year on record—that the Prospect reservoir was insufficient for the needs of the increasing population of Sydney and suburbs during a dry period. The Government, therefore, decided to construct additional reservoirs on the rivers forming the sources of supply, in which would be stored as much of the flood water from the available catchment area of 354 square miles as would be necessary to meet the constantly increasing requirements of the metropolis.

The first of this series of reservoirs is the Cataract dam, which was completed in 1907, and of which the catchment area above the impounding dam is about fifty-four square miles. The water released from this reservoir flows down the bed of the Cataract River to a diversion weir at Broughton's Pass, where it enters the previously existing tunnel, and is conveyed thence by a system of open canals to the Prospect reservoir. In traversing the steep and rocky bed of Cataract River the water is thoroughly aerated. The total distance travelled by the water from Cataract to Sydney *via* Prospect is 66½ miles, of which 21½ miles represents the distance from Prospect to Sydney.

The principal dimensions of the Cataract and Prospect dams are given below:—

CATARACT AND PROSPECT DAMS.

Dam.	Height above Foundation.	Width at Top.	Thickness at Bottom.	Length.	Area of Reservoir.	Capacity of Reservoir.
	Feet.	Feet.	Feet.	Feet.	Acres.	Gallons.
Cataract ...	192	16½	150	811	2,400	21,411,500,000
Prospect ...	85½	30	*	7,300	1,266½	11,029,200,000†

* Not available. † Of which 5,446,000,000 gallons are available by gravitation.

The present population of Sydney and suburbs supplied with water from these works is estimated at 582,000. The winter consumption of water ranges from twenty to twenty-two million gallons a day, while the summer consumption and evaporation together approximate to thirty million gallons a day. As the combined available capacity of the Cataract and Prospect reservoirs amounts to nearly 32,500,000,000 gallons, the storage available represents a supply for about 1000 days without rainfall.

(ii.) *Aqueducts and Mains.* The water is drawn off from the Prospect reservoir through a valve tower by cast-iron pipes and thence proceeds by canal, five miles in length, to the Pipe Head Basin, situated 16¾ miles from Sydney. It is then conveyed for a further distance of five miles by two wrought-iron pipes, each six feet in diameter, to Potts' Hill reservoir, which has a capacity of 100,000,000 gallons, covers twenty-four and a half acres, and is designed to tide the city over any interruption of supply from Prospect, and to prevent fluctuation of pressure. A by-pass is laid along the floor of the reservoir to enable both six-feet mains to deliver water to Sydney direct. At Potts' Hill the water passes through a screening tank constructed of copper-gauze screens, and thence proceeds towards the city in two 48-inch cast-iron mains. The first laid main is 48-inch as far as Petersham, whence it bifurcates, one branch (48-inch) leading to Petersham reservoir, the other (42-inch) to Crown Street reservoir, where the main pumping station is situated. The new 48-inch main, completed in 1893, continues of the same diameter direct to Crown Street. The main pumping plant consists of three pairs of compound high-duty pumping engines. The first set is capable of raising 400,000 gallons per hour to the Centennial Park reservoir, a height of 104 feet above the pumps, at which place a new covered reservoir, of a capacity of 18,500,000 gallons, has been constructed for the purpose of ensuring a larger bulk of water within the city limits; the second set is capable of raising 210,000 gallons per hour to the Woollahra reservoir, a height of 140 feet, and also of raising 200,000 gallons per hour to Waverley, a height of 220 feet above the pumps; while the third set is capable of raising 100,000 gallons per hour to the Waverley tanks.

(iii.) *Storage Reservoirs.* In connection with the water supply there are in all twenty-nine service reservoirs, with a total maximum capacity of 47,216,000 gallons. An auxiliary pumping station at Ryde has been erected for the supply of North Sydney. The station receives its supply either from Potts' Hill reservoir, through a 24-inch diameter pipe, or through a new 32-inch steel main from the Pipe Head Basin. Both these mains discharge into a reservoir, from which the water is pumped to a 1,000,000-gallon tank at Ryde, 234 feet above high-water mark, and by a continuation of the same main into another tank at Chatswood, at an elevation of 370 feet above high-water mark. The pumping plant consists of two vertical compound pumping engines, each of 146 I.H.P., and each capable of lifting 2000 gallons per minute against the maximum head. A 9-inch main extends over the Parramatta and Iron Cove bridges to supply the heights of Balmain.

(iv.) *Revenue, Expenditure, and Capital Cost of Sydney Waterworks.* The following table gives particulars as to the revenue, expenditure, and capital cost of the metropolitan waterworks for each financial year from 1901 to 1906:—

SYDNEY WATERWORKS.—REVENUE, EXPENDITURE, AND CAPITAL COST, 1901 TO 1906.

Year Ended 30th June.	Revenue.	Working Expenses.	Total Capital Cost.	Capital Cost exclusive of Items on which Interest is not charged.	Percentage of Working Expenses. to Revenue.	Percentage of Revenue to Capital Cost.	Interest Payable on Capital Cost.	Net Profit after paying Working Expenses and Interest.
	£	£	£	£	%	%	£	£
1901	203,348	49,270	4,676,479	4,300,552	24.22	4.72	152,333	1,745
1902	223,201	57,360	4,800,585	4,423,203	25.69	5.04	162,262	3,579
1903	220,745	71,139	4,866,942	4,489,560	32.22	4.91	159,773	—10,167†
1904	222,827	58,929	4,922,038	4,544,656	26.44	4.90	163,314	584
1905	251,503	66,015	4,608,581	4,434,991	26.24	5.67	156,372	29,116
1906	270,263	64,487	4,847,978*	4,674,341	23.86	5.78	164,216	41,560

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* As adjusted by the Committee appointed to investigate the capital accounts of the Board in May, 1904. † Represents a loss.

(v.) *Quantity of Water, Number of Houses, and Population Supplied, 1901 to 1906.* The following table gives various particulars shewing the increase in the supply of water in Sydney and suburbs from 1901 to 1906:—

SYDNEY WATERWORKS.—NUMBER OF GALLONS, HOUSES, AND POPULATION SUPPLIED, 1901 TO 1906.

Year Ended 30th June.	Number of Houses Supplied.	Estimated Population Supplied.	Average Daily Supply.	Total Supply for the Year.	Aver. Daily Supply.		Mains Laid.
					Per House.	Per Head of Estimated Populati'n.	
	No.	No.	Gallons.	Gallons.	Gallons.	Gallons.	Miles.
1901	98,298	491,000	21,582,677	7,877,677,191	219	43.95	40
1902	101,966	509,000	21,906,362	7,995,822,150	205	43.03	44
1903	104,681	523,000	16,895,867	6,166,991,500	162	32.30	30
1904	109,191	546,000	18,690,025	6,840,549,200	171	34.23	14
1905	112,348	561,715	21,712,832	7,925,183,659	195	38.65	36
1906	116,202	581,010	22,393,300	8,173,554,847	192	38.54	60

Graphs relating to the water supply of Sydney for the past ten years may be found on page 859 hereinafter.

(vi.) *Other Water Supply Systems under the Metropolitan Board.* In addition to the main metropolitan water supply system there are three other systems within the County of Cumberland managed by the Metropolitan Board. (*a*) The Richmond waterworks are entirely unconnected with the Sydney supply. The system consists of a small pumping station on the left bank of the Hawkesbury River, just below the confluence of the Grose and Nepean, a 6-inch supply main, four miles in length, and five and one-eighth miles of 3-inch and 4-inch reticulation mains. (*b*) The Wollongong waterworks are also unconnected with the Sydney supply. The source of supply is the Cordeaux River and the catchment area is 2400 acres in extent. The total capacity of the reservoir is 173,000,000 gallons and the total length of the main about nineteen miles. The town, of which the population is about 3700, is well reticulated with 4-inch and 3-inch pipes. (*c*) The Manly waterworks are supplied by a special catchment area of about 1300 acres, and are also connected with the metropolitan system by a 10-inch main from Mosman, crossing Middle Harbour, with ball and socket pipes. There are two horizontal compound duplex pumps, each having a capacity of 1,000,000 gallons in seventeen hours. (*d*) The water-supply for the districts of Campbelltown, Camden and Narellan, and Liverpool is not drawn from the main Sydney supply through Potts' Hill, but is received by gravitation from the upper canal at Prospect.

9. **Metropolitan Sewerage System.**—The system which is now under the control of the Metropolitan Board of Water Supply and Sewerage comprises the old and new systems. The old system was initiated by the City Commissioners in 1853, and continued by their successors, the present City Council, since their incorporation in 1857. The old system was designed on the principles of what is known as the "combined system," and comprises four main outfalls, with subsidiary sewers along the principal streets; these, in turn, receive the reticulation sewers of the minor thoroughfares. The four main outfalls discharged directly into the harbour, and the consequent pollution of the water and menace to public health led to the appointment of a commission to enquire into the best means of diverting the sewage from the harbour, and of disposing of it when thus diverted. The new intercepting system is the outcome of the labours of that commission. At the time of the transfer, in 1889, of the original sewerage works to the Metropolitan Board there were 70½ miles of old city sewers in existence. The new system adopted is on the lines of the partially "separate system," and intercepts all sewage from the gravitation zone—*i.e.*, from above a contour line about forty feet above high-water

mark; while the sewage from the low level areas—*i.e.*, from below that contour line, is eventually pumped into the gravitation sewers. The new scheme provides for two main outfalls, (*a*) the northern, and (*b*) the southern.

(i.) *The Northern System* discharges into the Pacific Ocean, and will, when the low-level systems are complete, take all sewage previously discharged into the harbour. The discharge is near Bondi, and at this place a large chamber has been constructed in the sandstone rock. From this chamber two channels bifurcate, so as to ensure a free discharge during either northerly, easterly or southerly gales, while above the chamber a shaft has been erected for ventilation and escape of air when the sea breaks into the discharge tunnels. The northern system receives sewage from Waverley, Bondi, Woollahra, Paddington, Elizabeth Bay, Double Bay, Darling Point, Rushcutters' Bay, the Glebe, and portions of Annandale, Leichhardt, and Balmain. Stormwater channels have also been constructed at various points to carry off the superfluous water after heavy rainfalls. The work in connection with the whole of the northern system was carried through varying formations; in some instances the stratum was indurated sandstone, in others shale, clay, and water-charged driftsand. Concrete enters largely into the constructional works, the lining of rock tunnels being principally bluestone concrete rendered with cement mortar, and wherever the outfall sewer crossed natural creeks or water-courses offlet and scour valves have been provided.

(ii.) *The Southern System* has its discharge into the sewage farm near Botany Bay, and passes from the main outfall into the screening chambers of the inlet house. The chambers, which intercept all extraneous matter before the sewage passes to the syphon-well, are in duplicate and controlled by valves, so that when one series is in use the other is being cleared out. The silt caught on the screens is forced through a pipe by means of compressed air into a wrought-iron silt tank, from which it is distributed over the farm in trucks drawn by a small locomotive, while the sewage flows from the syphon-well along a main carrier, and is distributed by means of valves over the irrigation beds and settling tanks. A portion of the area of the sewage farm has been cultivated, and fair crops have been grown, but it is stated that some course of treatment is necessary for this particular class of sewage, which contains a large amount of grease from the boiling-down establishments, before it can be utilised for agricultural purposes. The southern main outfall receives the drainage from Alexandria, Waterloo, Erskineville, Newtown, and parts of the Surry Hills district.

(iii.) *The Western System.* In addition to the two main outfalls already mentioned a subsidiary outfall called the western outfall has recently been constructed to deal with the sewage of the western suburbs. This starts at a receiving chamber at one end of the sewage farm, and runs in an open channel across portion of the sewage farm to another receiving chamber. From this chamber it continues in 6 ft. circular triplicate sewers to a penstock chamber in Premier Street, Marrickville, being carried on aqueducts over low-lying ground. The latter chamber receives the sewage from the eastern, northern, and western branch sewers, and drains part of Marrickville, Petersham, Stanmore, Newtown, Leichhardt, Annandale, Camperdown, Summer Hill, Ashfield, Enfield, Burwood, Five Dock and Concord.

(iv.) *Other Systems.* Another branch outfall has been constructed at Coogee, which discharges into the ocean and serves the districts of Randwick, Kensington, and Coogee. On the northern side of the city extensive works have been completed, and in the borough of North Sydney septic tanks were built in 1899 to deal with the sewage, while at Middle Harbour, Mosman and Manly ample provision has been made for the sanitation of the districts.

(v.) *Revenue, Expenditure, and Capital Cost of Sydney Sewerage Systems.* The following table gives particulars as to the revenue, expenditure, and capital cost of the metropolitan sewerage systems during each year from 1901 to 1906:—

SYDNEY SEWERAGE SYSTEMS.—REVENUE, EXPENDITURE, AND CAPITAL COST, 1901 TO 1906.

Year ended the 30th June.	Revenue.	Working Expenses.	Capital Cost.	Capital Cost, exclusive of Items on which Interest is not Charged.	Percentage of Expenditure to Revenue.	Percentage of Revenue on Capital Cost.	Interest Payable on Capital Cost.	Profit or Loss after Payment of Working Expenses and Interest.
	£	£	£	£	%	%	£	£
1901	125,290	45,395	3,280,427	3,066,147	36.23	4.05	106,475	*—26,580
1902	135,441	45,884	3,396,582	3,182,302	33.87	4.25	111,035	*—21,478
1903	145,666	46,747	3,591,155	3,365,155	32.09	4.32	117,496	*—18,577
1904	156,274	44,458	3,763,234	3,562,741	28.44	4.38	124,819	*—13,003
1905	213,937	54,313	4,265,424	3,774,264	25.38	5.66	134,563	25,061
1906	220,629	55,368	4,330,397	3,828,495	25.09	5.76	134,527	30,734

* Represents a loss.

(vi.) *Number of Houses Drained, Population, and Length of Sewers in Sydney Metropolitan Sewerage Systems.* The following table gives particulars as to the number of houses drained, the population, and the length of sewers within the Sydney metropolitan area for each year from 1901 to 1906:—

SYDNEY SEWERAGE SYSTEMS.—NUMBER OF HOUSES DRAINED, POPULATION, AND LENGTH OF SEWERS, 1901 TO 1906.

Year ended the 30th June.	Number of Houses Drained.	Estimated Population Served.	Total Length of Sewers.	Total Length of Storm-water Drains.	Ventilating Shafts Erected.	Sewers Ventilated.
	No.	No.	Miles.	Miles.	Feet.	Miles.
1901	75,416	370,000	515.62	25.91	194,667	450.0
1902	82,644	413,000	550.40	27.37	236,855	552.0
1903	78,620	400,000	588.38	37.27	239,767	595.0
1904	82,215	410,000	610.73	38.76	252,977	614.0
1905	85,958	430,000	630.42	44.71	256,535	621.7
1906	88,881	444,405	656.84	44.82	264,255	636.0

(vii.) *Assets and Liabilities.* The assets and liabilities of the water and sewerage services are not now kept separate. The following statement, however, shews the aggregate amounts for the year ended the 30th June, 1906:—

SYDNEY METROPOLITAN BOARD OF WATER SUPPLY AND SEWERAGE.—ASSETS AND LIABILITIES ON THE 30TH JUNE, 1906.

Assets.		Liabilities.	
	£		£
Sewerage works	4,325,397	CAPITAL DEBT, SEWERAGE—	
Water supply works... ...	4,812,978	Interest bearing	4,119,135
Stores, working plant, etc. ...	36,125	Non-interest bearing ...	211,262
Rates outstanding	24,319	CAPITAL DEBT, WATER SUPPLY—	
Other assets	184,964	Interest bearing	4,674,342
		Non-interest bearing ...	173,636
		Rates overpaid	319
		Other liabilities	112,152
		Balances of revenue accounts...	92,937
Total	£9,383,783	Total	£9,383,783

10. **The Hunter District Water Supply.**—The waterworks of the Lower Hunter were constructed by the Government under the provisions of the Country Towns Water Supply and Sewerage Act of 1880. In 1892 a special Act was passed establishing an independent Board to control the works. This Board consists of seven members, of whom three are nominated by the Governor, one elected by the Newcastle Municipal Council, two by the adjacent municipalities, and one by the municipalities of East and West Maitland and Morpeth. The following municipalities and incorporated areas are within the area of the Board's jurisdiction :—

Newcastle Division.—Adamstown, Argenton, Ash Island, Boolaroo, Carrington, Hamilton, Hexham, Holmesville, Lambton, Merewether, Minmi, Newcastle, Plattsburg, Wallsend, Waratah, and Wickham.

Maitland Division.—Abermain, Bolwarra, East Greta, Heddon Greta, Hinton, Homeville, Kurri Kurri, Lorn, East and West Maitland, Morpeth, Oakhampton, Pelaw Main, Rutherford, Stanford Merthyr, Telarah, and Weston.

(i.) *Description of Waterworks.* The water supply is pumped up from the Hunter River about a mile and a half from West Maitland, the engines being situated above flood level on a hill about forty-four chains from the river. At the pumping station there is a settling tank of 1,390,500 gallons capacity, four filter beds, a clear water tank holding 589,500 gallons, and a storage reservoir of 172,408,100 gallons capacity. The filtered water is pumped from the clear water tank into two summit reservoirs, one of which is connected by a 10-inch cast-iron main 4⅛ miles in length, and supplies East and West Maitland, Morpeth, and Maitland, while the other is fed by two rising mains, one riveted steel pipe 20¾ in. diameter, and a 15-inch cast iron main, 5⅗ miles long, and supplies the other districts under the control of the Board. In seven of these districts reservoirs having a total capacity of nearly 4,000,000 gallons are supplied by gravitation. On the hill at Newcastle there is also a high-level iron tank with a capacity of 20,000 gallons, which is supplied by a small pumping engine on the roof of the Newcastle reservoir.

(ii.) *Capital Cost, Revenue, and Expenditure, 1901 to 1906.* By the Act of 1892 referred to above and an Amending Act of 1894 the capital debt of the Board was to be liquidated by annual instalments distributed over 100 years with interest at 3½ per cent. By a further amending Act of 1897 the repayment of expenditure on permanent works was abrogated, and the annual instalments were to be paid in liquidation of the cost of renewable works to be fixed by the Government from year to year. In the subjoined table particulars are given as to the capital cost, revenue, and expenditure, and also as to the number of houses and population supplied for each financial year from 1901 to 1906, inclusive:—

THE HUNTER DISTRICT WATER SUPPLY BOARD.—CAPITAL COST, REVENUE, EXPENDITURE, NUMBER OF HOUSES, AND POPULATION SERVED, 1901 TO 1906.

Year ended 30th June	Revenue.	Working Expenses (including Interest).	Capital Cost.	Houses Supplied.	Estimated Population Served.	Supply.	
						Daily Average.	Total.
	£	£	£	No.	No.	Gallons.	Gallons.
1901 ...	27,405	30,948	485,835	9,086	45,400	1,005,000	366,889,000
1902 ...	29,558	32,109	494,644	9,875	49,400	1,119,000	408,508,000
1903 ...	31,102	32,217	500,784	10,522	52,600	1,113,000	406,172,000
1904 ...	31,360	32,361	515,565	11,100	55,500	1,093,000	399,954,000
1905 ...	34,486	33,714	533,270	12,167	60,800	1,266,000	461,936,000
1906 ...	40,801	34,801	[1]544,798	12,968	64,800	1,479,000	539,654,900

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[1] Based upon statement referred by the Minister for Works to the Board for report. The debt has not yet been finally determined.

The operations of the Hunter District Board are at present entirely confined to water supply, but a sewerage scheme is in course of construction by the Public Works Department, and when completed will be handed over to the Board.

11. **Water Supply and Sewerage in Country Towns.**—With the object of assisting municipalities to construct systems of water supply and sewerage, the Country Towns Water Supply and Sewerage Act of 1880 was passed. Under this Act the amount for carrying out the works is advanced by the State, and the municipality has the option of undertaking the construction of the works, failing which the Government undertakes the duty. Municipalities which avail themselves of the provisions of the Act are empowered to levy a rate for each service not exceeding a maximum of 5 per cent. on the assessed value of land and tenements, in addition to the ordinary municipal rates. The original Act, as amended in 1894 and in 1905, provides that the sum advanced, with interest at 4 per cent. per annum, must be repaid by a maximum number of 100 yearly repayments, and also provides for the issue of licenses to workmen, for the recovery of rates, and for making by-laws for the assessment of lands and other purposes.

(i.) *Waterworks.* Up to the 30th June, 1905, thirty-six country municipalities had availed themselves of the privileges of the Act as regards waterworks, all of which at that date had been completed and handed over by the Government. The total amount expended on these works was £612,622, and the total of the sums payable annually for a period of 100 years was £22,152, the first repayments having become due at various dates ranging from the end of the year 1893 to the end of 1904. In the calculation of these repayments the interest on the expenditure has been added, and any payments by the councils, as well as sums remitted under the authority of the Act, have been deducted.

(*a*) In addition to those above mentioned, waterworks were proposed, or in course of construction, under the Act at thirty-five country towns, the total amount expended thereon up to the 30th June, 1905, being £303,236.

(*b*) Thirteen municipalities have constructed works out of their own resources, and of these seven have also new works constructed by the Government. The estimated values of the works constructed by the municipalities on the 6th February, 1905, were £72,051.

(*c*) The waterworks at Broken Hill and Silverton were constructed by a private company under a special Act of Parliament passed in 1888, but a scheme for the supply of Broken Hill is now being carried out by the Government.

(ii.) *Sewerage Works.* Only ten municipalities have taken advantage of the provisions of the Act with respect to carrying out of sewerage works in country towns. A number of municipalities have constructed sewerage systems altogether apart from the Act, and of these some have been taken over by the Metropolitan Board, while others will eventually form part of the general scheme for the metropolitan area. Up to the 30th June, 1905, only three of the sewerage works constructed under the Act had been handed over; the amount payable annually to the State Government for these three works was £214, while the balance due, including arrears, amounted to £4887. At the same date seven other sewerage works were proposed and in course of construction under the Act, the total amount expended to date being £43,001.

12. **Municipal Gas and Electric Lighting Works.**—Under the old Municipalities Acts municipal councils were authorised to construct works for public lighting, and were empowered to provide private consumers with gas, but electric lighting schemes could not be carried out excepting under the authority of a special Act. Under the Local Government Act 1906 the duty of lighting streets, roads, and public places is imposed on the councils, who may, if they desire, acquire power to construct and maintain works for the supply of electricity. In February, 1905, there were twenty-five municipal gasworks in New South Wales, the value of the plant being £184,900; of these three were acetylene gas plants valued at £460. At the same date six municipalities, Sydney, Red-

fern, Newcastle, Penrith, Tamworth, and Young, had erected electric-lighting plants, the total value of which was £303,215. Of this sum £251,215 had been spent on the city of Sydney electric-light plant, which was first brought into use in July, 1904, since which time great progress has been made and electric lights have been installed in all the public parks and the more important streets and roads.

13. **Fire Brigade Boards.**—Under the provisions of the Fire Brigades Act of 1902, which repealed the Act of 1884, a Metropolitan Fire Brigade Board and forty-two country boards have been established. The expense incurred in maintaining the metropolitan brigade is shared equally by the Government, the municipalities within the metropolitan area, and the various fire insurance companies. The country boards also are subsidised by the Government, the municipalities interested, and the insurance companies.

(i.) *The Metropolitan Fire Brigade Board* consists of six members, viz.—the chairman, appointed by the Government, and five elected members, one of whom is appointed by the Municipal Council of Sydney, one by the other municipalities within the proclaimed area, two by the fire insurance companies, and one by the volunteer fire companies. The municipalities contribute *pro rata* to the assessed value of ratable property in their respective districts, and the fire insurance companies proportionately to the net risks held on properties within the metropolitan district. Sydney Harbour is outside the jurisdiction of the Board, but by an agreement entered into in October, 1905, between the Harbour Trust and the Fire Brigades Board it is provided that in all cases of fire occurring on board any vessel in the port, the Trust's brigade shall work under the direction of the superintendent of fire brigades. The Trust possesses two vessels fitted with fire-fighting appliances; these vessels are always under steam, and in readiness for any emergency. There are fifteen stations belonging to the metropolitan brigade, employing in all 168 firemen; telephones connected with these stations are placed in fire-alarm boxes in the important localities of the city and suburbs. There are also twenty-three volunteer fire companies within the metropolitan area, having 237 firemen on their rolls; these companies are registered at the offices of the Board and subject to the inspection and orders of the superintendent of the metropolitan brigade.

(ii.) *Receipts and Disbursements of Metropolitan Board with Total Amounts at Risk, 1902 to 1905.* The subjoined table shews the actual receipts and disbursements of the Metropolitan Board, and also the total amounts of risks held by the insurance companies within the metropolitan area for each year from 1902 to 1905, inclusive :—

SYDNEY METROPOLITAN FIRE BRIGADES' BOARD.—RECEIPTS AND DISBURSEMENTS, ALSO TOTAL AMOUNTS AT RISK, 1902 TO 1905.

Year.	Receipts.					Disbursements.	Net Risks.
	From Government.	From Municipalities.	From Fire Insurance Companies.	From other Sources.	Total.		
	£	£	£	£	£	£	£
1902 ...	10,200	10,281	10,235	1,981	32,697	37,128	71,750,461
1903 ...	15,150	15,323	15,150	2,498	48,121	42,055	73,083,028
1904 ...	14,000	13,942	14,000	3,293	45,235	45,235	75,147,807
1905 ...	14,300	14,147	14,300	6,395	49,142	49,142	78,108,749

(iii.) *Country Fire Brigade Boards.* Forty-two country Boards have been established under the Act. These Boards are entitled to receive subsidies from the Government. Owing to an ambiguous clause in the statute the insurance companies and municipalities do not always consider themselves called upon to contribute to the expense of maintenance of the brigades as defined by the Act. In addition to the Boards constituted under the Act there were at the end of the year 1905 seventy-nine country fire brigades in existence, towards the support of which the several municipalities generally contribute. In many country districts volunteer fire brigades have been established for the purpose of dealing with bush fires.

14. **Sydney Harbour Trust.**—The establishment of this Trust was the direct outcome of the outbreak of bubonic plague in the port of Sydney in the early part of the year 1900. It was proved that this disease was due to the introduction of plague-stricken rats in vessels arriving from ports in which the disease had made its appearance. As a consequence the whole of the foreshores of the harbour, together with certain adjoining wharves, stores, dwelling houses, and other properties, were vested in a body of trustees. The Trust was established by an Act which came into force on the 11th February, 1901. Under this Act an independent body of three Commissioners was created for the purpose of administering the affairs of the harbour and of fostering its interests, each commissioner being entitled to hold office for seven years, subject to certain conditions. This Board of Commissioners is invested with the exclusive control of the port and shipping, lighthouses, beacons, buoys, wharves, and docks (with the exception of wharves and docks constructed on land which has been alienated from the Crown), in Sydney Harbour. and is empowered to levy certain tolls, dues, rates, rents, and charges, and to resume or purchase lands and buildings. Prior to the establishment of the Trust, the extensive foreshores of the port offered opportunities to private individuals of acquiring water frontages, which enabled them to participate in the revenue to be derived from the wharfage and tonnage rates as prescribed by the various Acts. This alienation of the water frontages was in return for comparatively small payments. In effect this deprived the Crown of an annual revenue which, under other circumstances, might have been applied to the maintenance of the port. One of the greatest changes made by the Sydney Harbour Trust Act was the alteration of the basis upon which wharfage is charged, so that goods which do not use the wharf, but are lightered overside, are subject to wharfage. The Act embodied the wharfage schedule appended to the Wharfage and Tonnage Rates Act of 1880, by which the inward rates were fixed at one shilling and eightpence per ton, and the outward at tenpence; but it did not provide for any reduced rate for transhipment goods arriving from oversea as had previously been allowed, although it gave the Commissioners power to make or to recommend certain exemptions and to increase the inward wharfage to three shillings per ton measurement, or to four shillings per ton dead-weight. During the year 1901 the Commissioners recommended the Government to increase the inward rates to two shillings and sixpence per ton and to abolish outward wharfage, and these recommendations were duly endorsed by the Executive Council. Liberal concessions were also made with regard to transhipment goods arriving from oversea. All goods produced or manufactured within the State of New South Wales were exempt from wharfage rates until the Sydney Harbour Rates Act 1904 was passed. Under this Act a schedule of wharfage charges was provided for, a small charge of fivepence per ton being imposed on all goods transhipped; important amendments were also made in the old tonnage rates charges (which had been in existence since 1880), with the result that many vessels which previously escaped payment have now to pay a fair charge for the use made of the wharfage accommodation provided by the Trust. Considerable improvements have been made by the Commissioners in the wharfage accommodation of the port and in the sanitary condition of the area vested in the Trust by the construction of new jetties, sheds, offices, and waiting rooms; by dredging and by preventing the pollution of the waters of the port; by opening up new roads; and by taking means to prevent rats and other vermin from finding a harbourage in the produce stores and in the vicinity of the wharves.

(i.) *Revenue, Expenditure, and Capital Cost.* The subjoined table gives particulars of the revenue and expenditure of the Trust, and also shews the total capital debt for properties, etc., vested in the Commissioners; the amount of interest payable on the debt, and the balance of revenue after deducting expenditure, interest, and the amount of the Commissioners' salaries.

SYDNEY HARBOUR TRUST.—REVENUE, EXPENDITURE, CAPITAL DEBT, INTEREST, AND BALANCE, 1901 TO 1906.

Year ended the 30th June—	Revenue.				Expenditure.	Total Capital Debt.†	Interest.‡	Balance.§
	Wharfage Rates.	Tonn'ge Rates.	From Other Sources.	Total.				
	£	£	£	£	£	£	£	£
1901* ...	42,841	3,208	12,326	58,375	9,983	...	...	...
1902 ...	127,197	9,824	82,626	219,647	75,692	...	...	...
1903 ...	147,718	3,762	104,665	256,145	82,185	...	...	...
1904 ...	117,214	5,715	138,748	261,677	80,082	5,091,872	180,257	‖—2,612
1905 ...	111,891	7,076	134,614	253,581	73,845	5,112,194	182,962	‖—7,226
1906 ...	143,625	6,935	120,129	270,689	76,804	5,155,289	180,951	9,434

* For the period from 11th February to the 30th June, 1901. † Not determined until the year 1904. ‡ The amount of interest has been computed by taking the rate of interest on the total capital debt of the State. § After deducting expenditure, interest, and also £4000 per annum for Commissioners' salaries. ‖ Represents a loss.

(ii.) *Dredging and Towing.* The subjoined statement gives particulars of the dredging and towing done by the five dredges and the six tug boats owned by the Trust:—

SYDNEY HARBOUR TRUST.—PARTICULARS OF DREDGING AND TOWING, 1901 TO 1906.

Year.	Dredging.			Towing Dredged Material.		
	Tons Dredged.	Total Expenditure.	Expenditure per Ton.	Miles run Towing.	Total Expenditure in Towing.	Expenditure per Mile Towing.
	Tons.	£	Pence.	Miles.	£	Pence.
1901* ...	317,500	3,696	2.79	29,277	2,849	23.35
1902† ...	320,740	5,112	3.75	25,993	2,825	26.08
1903 ...	783,374	12,486	3.82	65,444	8,037	29.47
1904 ...	629,792	11,829	4.50	55,216	7,404	32.18
1905 ...	490,045	8,808	4.31	46,542	5,378	27.73
1906 ...	489,610	8,311	4.08	39,301	5,207	31,78

* From the 11th February to the 31st December, 1901. † For the six months ended 30th June, 1902.

15. **Local Option.**—Particulars with regard to the working of the Acts relating to the subject of local option in the several States are not generally available. It is proposed to deal with this subject in a future issue of this book.

16. **Municipal Association of New South Wales.**—The objects of this association are to watch over and protect the interests, rights, and privileges of municipal corporations, to take action with reference to any subject affecting municipal bodies or municipal legislation, and to promote the efficient carrying out of municipal government throughout the State. The association was established in January, 1883. Monthly and annual reports are issued to, and legal advice is obtained by councils through membership. A conference of delegates representing the subscribing councils is held annually.

§ 3. Victoria.

1. **Development of Types of Local Authorities.**—In Victoria there are now two types of municipal institutions, (*a*) boroughs, including cities and towns, and (*b*) shires, and although they are now dealt with by the same Act their origin was distinct, and in the early days of the development they were provided for by independent enactments. Melbourne and Geelong, the latter of which was for many years the second largest town in the State, having been incorporated under special statutes prior to the establishment of a general system of local government, are not subject to the provisions of the Local

Government Acts except in a few comparatively unimportant details. Melbourne was incorporated as a town in 1842, and as a city in 1847; Geelong was incorporated as a town in 1849.

Further particulars relating to the city of Melbourne are given in a summary at the end of this section.

(i.) *Institution of Road Districts.*—The Imperial Act of 1842, under which the Governor of New South Wales was authorised to form districts for the purposes of self-government, has already been referred to. This Act was succeeded by the Act of 1850, under which the district of Port Phillip was separated from New South Wales, and which provided that the proclamation of districts (under the Act of 1842) which had not been followed by an election of councillors should be void, and where councillors had been elected the letters patent forming such districts could be revoked by petition. For the future such districts were only to be incorporated upon petition of the inhabitants to the Governor, who was authorised to establish elective district councils, with power to frame by-laws for making and maintaining roads and bridges, establishing schools, and levying local tolls and rates. The necessity for a more comprehensive scheme of local government soon became apparent, owing to the increase of settlement on the land which followed the excitement of the gold rush, and in 1852 two committees of the Legislative Council were appointed, one to enquire into the operations of district councils which had been established, the other to report generally upon the condition of the roads and bridges in the State, and as to how the funds for their construction and maintenance could be best expended. The report of the latter committee was of considerable value, because it formed the basis of the first Victorian Act which provided a scheme for the local government of country districts, namely the Roads Act of 1853. Under this Act a distinction was made between main roads and parish or cross roads. The Governor was authorised to declare any part of the colony to be a road district; main roads were placed under the care of a central Road Board with an Inspector-General and staff, while parish roads were to be made and maintained by the district councils, who were empowered to levy rates for the purpose.

(ii.) *Establishment of Shires and Extinction of Road Districts.* The Act of 1853 continued in force for ten years, when it was repealed, and its provisions amended and consolidated in the Road Districts and Shires Act 1863. By this Act the central Road Board was abolished, and the establishment of shires and shire councils was authorised. Any district having an area of not less than 100 square miles and a revenue from general rates of not less than £1000 might be incorporated as a shire, the duties and powers of which were the same as those of the districts, but additional privileges, such as power to raise loans and to grant licenses, were conferred upon the shires. Provision was also made for the regulation of the proceedings of shire councils, the preparation of voters' lists, elections, accounts, revenue, rates, auditors, and other matters, and these provisions have been substantially continued in later Acts. The result of the Act of 1863 was that the road districts were gradually developed into or were absorbed by the shires, and the next important measure which was passed, the Shires Statute Act of 1869, recognised only the latter, and with respect to shires retained the principal features of the preceding Act.

(iii.) *Constitution of Urban Municipal Districts and Boroughs.* In the meantime suburban districts and country towns were growing up, and in the year 1854 an Act was passed for the establishment of municipal boroughs in Victoria. Provision was made whereby any district having an area of not less than nine square miles, no part of which was more than six miles from any other part, and having a population of not less than 300, might, on petition, be constituted a municipal district. This Act, which thus originated those municipalities now known as boroughs (including cities and towns), was amended and repealed by the Municipal Institutions Consolidating and Amendment Act 1863, which re-enacted the principal features of the previous Act. These features are practically the same as those which now prevail with regard to boroughs. The Act of 1863 was in turn amended from time to time, and the law relating to boroughs was consolidated in 1869 by the Boroughs Statute Act.

(iv.) *Legislation applying to all Types of Municipalities.* Both the Shires Statute Act and the Boroughs Statute Act of 1869 were repealed and their provisions amended and consolidated by the Local Government Act 1874, which, after further improvements and extensions, was in turn consolidated by the Local Government Act 1890, which was itself amended from time to time. In 1899 a select committee of the Legislative Assembly was appointed to enquire into and to report upon the working of the Act of 1890 and to suggest amendments required in the law relating to local government. This committee was subsequently constituted a Royal Commission, and in 1902 issued a report to which was appended the draft bill which became the Local Government Act 1903, the provisions of which now regulate the working of municipalities in the State.

2. **Local Government Systems now in Operation.**—Local government is now administered under the Act of 1903 throughout the whole of the State, with the exception of about 600 square miles in the mountainous parts of the county of Wonnangatta, and about sixty-four square miles in French Island.

(i.) *Constitution of Municipalities.* Provision is made for the continuation of municipalities established under previous Acts and for the constitution of new ones.

(a) *Shires.* Any part of the State containing ratable property yielding, upon a rate not exceeding one shilling in the pound, a sum of £1500 may be constituted a shire upon petition of at least fifty inhabitants.

(b) *Boroughs.* Any part of the State, not exceeding in area nine square miles, and having no point distant more than six miles from any other point, and containing a population of not less than 500 and ratable property yielding, upon a rate not exceeding one shilling in the pound, a sum of £300 may be constituted a borough upon petition of at least 250 resident householders. Any borough having during the preceding financial year a revenue of £10,000 may be declared a town, or having a revenue of £20,000 may be declared a city upon petition under the common seal of such borough. Provision is also made for severing any part of a municipality and annexing the same to an adjoining municipality; for dividing municipalities into any number of subdivisions not exceeding eight; and for uniting two or more boroughs which form one continuous area so as to form one borough.

(c) *Townships.* Upon petition signed by not less than twenty-five ratepayers resident in any portion not exceeding three square miles in extent of any shire and distant more than ten miles from the boundaries of the city of Melbourne, the Governor may with the consent of the municipal council proclaim such portion a township.

(ii.) *The Municipal Council.* It is provided by the Act of 1903 that, in the case of existing municipalities, the council shall consist of the number of members assigned to it at the commencement of the Act, but, when the number of members is determined under the Act, such number shall be, in case the district is not subdivided, some multiple of three, not less than six nor more than twenty-four, and, in case such district is subdivided, the number produced by the return of three councillors for every subdivision. Every person liable to be rated in respect of property in the municipal district of the ratable value of £20 at the least is qualified to hold the office of councillor in any municipality, provided that no female, nor any undischarged bankrupt, nor a person attainted of treason or convicted of felony shall be so qualified. Other persons may also be disqualified on the ground of interest. Provision is made for the retirement of one-third of the councillors annually in rotation, and for the election and privileges of the chairman, who is styled the mayor of a borough and the president of a shire.

(iii.) *The Municipal Electorate.* Every person who on the 10th June in any year has attained the age of twenty-one years, and is liable to be rated in respect of property within a municipal district, in respect of which all rates made before the 10th March of the year have been paid, is entitled to be enrolled as a voter, but no person may be enrolled in respect of property rated under £5 a year, unless there is a house on the property, and he resides there. The occupier and the owner of any ratable property may not be both enrolled in respect thereof, the former having the right to be enrolled instead of the latter. Corporations liable to be rated may appoint not more than three persons to be enrolled in their place. Joint occupiers and owners, not exceeding three, are each entitled to be enrolled, and in case more than three persons are rated in respect of any property, those whose names stand first in order upon the rate last made or upon the last valuation and return are so entitled. All persons who are not entitled to be enrolled by reason solely of non-payment of rates may be placed on a separate voters' list, and for the purpose of enabling them to vote at elections of members for the State Parliament they may be included in the rolls of ratepaying electors therefor if duly qualified in other respects. Plurality of votes is allowed on the scale shewn in the following statement:—

VICTORIA.—PROPERTY QUALIFICATIONS FOR ENROLMENT AS MUNICIPAL VOTER.

Number of Votes.	Annual Ratable Value of Property.	
	Boroughs (including Cities and Towns).	Shires.
1	Under £50.	Under £25.
2	From £50 to £100.	From £25 to £75.
3	£100 and upwards.	£75 and upwards.

Voters' lists are prepared annually by collectors appointed for the purpose; provision is made for the revision of the lists, for the time and place of holding elections, for the nomination of candidates, for the application of the Voting by Post Act 1900; for the appointment of officers, and for the meetings and proceedings of councils.

(iv.) *Powers and Functions of Councils.* Municipal councils are empowered to make by-laws for a great number and variety of purposes, of which the most important are as follows:—The control and regulation of roads and streets, buildings, wharves, and public places, of nuisances, passenger vehicles, carters, boatmen, and porters; the regulation and maintenance of water-supply, sewerage, drainage, and lighting; the establishment and control of fairs and public sales, labour marts and offices; the preservation and management of commons and public reserves; the regulation of traffic and hoardings; the public health and the prevention of contagious or infectious diseases, and generally for maintaining the good rule and government of the municipality. Councils are authorised to undertake the supply of light, heat, or motive power for public or private purposes; they may construct and maintain tanks, dams, and reservoirs, and may provide public baths, markets, weigh-bridges, pounds, abattoirs, places of public recreation, and charitable institutions. One of the principal functions of the councils is to construct and maintain public highways, streets, bridges, ferries, and jetties within their respective localities. At the request of the council the provisions of the Act as to the maximum weight which it is permissible to carry on vehicles on any other public road within the municipality may be made to apply by proclamation.

(v.) *Ratable Property.* All land, including buildings and improvements thereon, within a municipality, is ratable property, except the following:—Crown lands unoccupied or used for public purposes; land used exclusively for commons, mines, public worship, mechanics' institutes, public libraries, cemeteries, free primary schools, and charitable purposes; land vested in, in the occupation of, held in trust for, or under the control of any municipality, local governing body, or commissioners under the Rates Act; land vested in the Railway Commissioners, in the Minister of Public Instruction, in the Board of Land and Works, in the Commissioners of the Melbourne Harbour Trust, and in the Melbourne and Metropolitan Board of Works. The valuation of all property is computed at its net annual value, that is to say, at the rent at which the same might reasonably be expected to let from year to year, free of all usual tenants' rates, taxes, and cost of insurance, but no ratable property may be computed as of an annual value of less than 5 per cent. upon the fair capital value of the fee-simple thereof.

(vi.) *Rates.* The municipal councils are empowered to levy rates, which, together with grants and subsidies received from the Government, license fees, market dues, rents, tolls, and sanitary charges, form their chief sources of income. The rates which may be levied are of three kinds, namely—general, extra and separate rates.

(*a*) *General Rates* are levied at least once in every year, and must not exceed two shillings and sixpence in the pound of the net annual value, nor be less than sixpence in the pound of such value. Every general rate must be made for one year or half a year or such other period less than a year, but not less than three months, as the council thinks fit, and must be levied on the occupier of the property rated, or if there be no occupier, or if the occupier be the Crown or the Minister of Public Instruction, or a public or local body, then upon the owner of the property.

(*b*) *Extra rates* may be levied in any municipal district which is subdivided equally in respect of all the ratable property within any one or more of the subdivisions, but cannot be levied except in accordance with the requisition of not less than two-thirds of the councillors returned by such subdivision. The amount of general and extra rates levied in any year must not exceed two shillings and sixpence in the pound of the net annual value.

(*c*) *Separate rates* may be levied where it appears to the council that any works or undertakings authorised by the Act are for the special benefit of any particular portion of the municipal district, but may be made only upon petition signed by a majority of the occupiers and by at least one-third of the owners of the properties affected, and must be confirmed by order of the Governor-in-Council. Separate rates may be levied equally on all properties affected, or may be differential according to the benefits to be received by different properties, and the amount of the rate must be such as will, in the opinion of the council, suffice to provide for the payment of interest and periodical repayments of, or sinking fund for, the money borrowed on the security of such rate.

(vii.) *Borrowing Powers.* The council of every municipality may borrow money upon the credit of such municipality by the sale of debentures, either for the purpose of liquidating previous loans or for the purpose of constructing certain specified permanent works or undertakings, such as the construction, alteration, or enlargement of streets, roads, bridges, ferries, sewers, and drains; the construction and purchase of waterworks, electric light or gas works, abattoirs, markets, baths, pleasure grounds, libraries, museums, and places of public resort and recreation; the establishment of hospitals, asylums, and other buildings for charitable purposes; the destruction and disposal of refuse, and the purchase of land or any easement, term, right, or privilege in, over, or affecting land. The amount of money so borrowed at any time for permanent works must not exceed ten times the average income of the municipality for the three preceding years, and the amount borrowed in the case of any municipality already indebted must not exceed the difference obtained by subtracting from ten times such average income the balance remaining unpaid of any previous loans. The question as to whether any loan for the purpose of permanent works shall be incurred must be submitted to a poll of the ratepayers upon demand signed by any twenty persons whose names are inscribed on the municipal roll. The council of any municipality may, in addition to the borrowing powers mentioned above, borrow money for permanent works or undertakings on the security of its income, but not upon the credit of the municipality, by the issue of debentures or by a mortgage over such income. The amount of money so borrowed must not at any time exceed five times the average income of the municipality for the three preceding years. The income referred to does not include moneys derived from general, separate, or extra rates, special improvement charges, publicans' licenses, or endowment from the consolidated revenue fund. Temporary advances by way of overdraft of the current account may also be obtained, but must not at any time exceed one-half the prior year's revenue.

(viii.) *Endowment.* Under the Local Government Act 1874 an annual endowment of £310,000 was provided for the municipalities. This amount ceased to be payable in 1879, but a subsidy, amounting to £310,000, was voted by Parliament annually, and was increased year by year, until £450,000 was granted in 1889-90 and 1890-91. The Local Government Act 1891 authorised the payment of an annual endowment of £450,000, but this amount was reduced year by year to £50,000 in 1902, but was increased to £75,000 for the year 1906-7. For the purpose of distributing the endowment the shires are classified. Under the Municipal Endowment and Reclassification of Shires Bill, now before the State Parliament, it is proposed to re-establish the amount of the endowment at £100,000, and to determine a new classification in which the amount is to be allocated. In addition to the endowment of £50,000 the municipalities received from the Government during the financial year 1905-6 a sum of £92,245 as the equivalent for (*a*) fees for licenses, (*b*) fees for the registration of brewers and spirit merchants, and (*c*) fines, penalties, and forfeitures incurred under the Licensing Act 1876. The following table shews the amount of rates in the pound levied, the method of distribution of endowments, and the amounts paid as equivalents for fees, etc., during the year 1905-6:—

VICTORIA.—MUNICIPAL RATES, ENDOWMENTS, AND EQUIVALENTS FOR FEES, 1905-6.

Particulars.	Boroughs.	Classification of Shires.						Transferred to Trust Fund for Salaries, etc.	Total.
		1st Class.	2nd Class.	3rd Class.	4th Class.	5th Class.	6th Class.		
Rate levied	1s. 7.6d.	...	2s. 7.4d.	3s. 0.6d.	4s. 4.3d.	5s. 2.1d.	5s. 11.9d	...	...
Amount of Endowment £	840	...	16,846	18,438	1,671	7,862	2,983	1,360	£50,000
Equivalent for fees, etc. £	63,606	250	15,467	9,509	832	1,840	741	...	£92,245

3. **Boroughs and Shires.—Number, Population, and Value of Ratable Property, 1901 to 1907.**—The following table shews the number of cities, towns, boroughs, and shires, their estimated population, the number of ratepayers and dwellings, and the value of ratable property for the years 1901 to 1907, inclusive :—

VICTORIA.—NUMBER AND POPULATION OF MUNICIPALITIES, NUMBER OF RATEPAYERS AND DWELLINGS, AND VALUE OF RATABLE PROPERTY IN CITIES, TOWNS AND BOROUGHS, 1901 TO 1907.

Financial Year.	Number of Municipalities.	Estimated Population.	Number of Ratepayers, (both sexes).	Estimated Number of Dwellings.	Estimated Value of Real Property.	
					Total.	Annual.
					£	£
1901	58	627,237	153,783	130,358	67,302,423	4,765,632
1902	60	*647,397	157,820	*134,465	77,289,498	5,223,282
1903	60	632,607	155,262	140,248	92,099,451	5,308,546
1904	60	652,658	158,691	142,352	93,376,880	5,366,477
1905	60	657,815	159,953	143,667	94,583,732	5,498,471
1906	‡60	684,358	169,536	149,649	99,354,665	5,664,425
1907	60	695,192	171,909	151,833	100,801,295	5,779,231

* Census figures. ‡ The shires of Coburg and Camberwell were constituted boroughs in 1905, and North Melbourne and Flemington were joined to the City of Melbourne.

VICTORIA.—NUMBER AND POPULATION OF MUNICIPALITIES, NUMBER OF RATEPAYERS AND DWELLINGS, AND VALUE OF RATABLE PROPERTY IN SHIRES, 1901 TO 1907.

Financial Year.	Number of Municipalities.	Estimated Population.	Number of Ratepayers (both sexes).	Estimated Number of Dwellings.	Estimated Value of Real Property.	
					Total.	Annual.
					£	£
1901	150	571,683	159,128	122,645	106,839,331	5,771,865
1902	†148	*551,523	147,671	*118,538	107,812,500	5,661,805
1903	148	557,285	150,724	118,996	111,803,468	5,880,386
1904	148	556,350	152,204	121,643	115,766,850	6,071,353
1905	148	552,414	153,908	121,335	116,336,442	6,244,799
1906	‡146	541,242	149,350	118,339	117,260,959	6,130,718
1907	146	565,739	151,869	120,114	121,797,646	6,395,094

* Census figures. † The shires of Caulfield and Malvern were constituted boroughs in 1901. ‡ The shires of Coburg and Camberwell were constituted boroughs, and North Melbourne and Flemington were joined to City of Melbourne in 1905.

4. **Municipal Assets and Liabilities, 1901 to 1906.**—The assets of municipalities may be classified under three heads—(*a*) the municipal fund, (*b*) the loan fund, and (*c*) property; the liabilities under two heads—(*a*) the municipal fund, and (*b*) the loan fund. The following table shews the amount of municipal assets for each financial year from 1901 to 1906, inclusive:—

VICTORIA.—MUNICIPAL ASSETS AND LIABILITIES, 1901 TO 1906.

Items.	1901.	1902.	1903.	1904.	1905.	1906.
ASSETS.						
	£	£	£	£	£	£
MUNICIPAL FUND—						
Uncollected rates	187,205	141,482	130,203	119,013	119,028	124,174
Other assets	122,581	153,490	166,753	168,107	168,737	184,380
LOAN FUND—						
Amount at credit	675,310	697,019	654,281	680,989	701,503	740,382
Arrears due	1,391	1,175	2,033	4,352	4,459	1,341
Unexpended balances	394,136	282,229	223,624	160,321	112,643	302,400
PROPERTY—						
Buildings, markets, etc.... ...	2,507,441	2,470,460	2,449,762	2,495,101	2,530,858	2,573,017
Waterworks	197,675	210,367	226,220	226,084	234,461	221,548
Gasworks	63,732	61,592	60,820	68,744	65,760	60,510
Total	4,149,471	4,017,814	3,913,696	3,922,711	3,937,449	4,207,752
LIABILITIES.						
	£	£	£	£	£	£
MUNICIPAL FUND—						
Arrears due to sinking funds ...	1,021	1,175	2,033	4,352	4,459	1,341
Overdue interest	9,412	13,014	17,616	17,875	16,637	16,951
Bank overdrafts	157,046	148,236	107,090	89,825	90,660	89,370
Temporary Government advances	20,901	17,604	13,310	8,098	4,018	694
Other liabilities	142,530	147,888	126,671	132,098	139,717	175,964
LOAN FUNDS—						
Loans outstanding	4,253,304	4,254,061	4,212,051	4,205,886	4,186,602	4,375,116
Due on loan contracts	52,826	33,455	30,092	29,047	27,438	2,256
Total	4,637,041	4,615,463	4,508,863	4,488,081	4,469,531	4,661,692

5. **Revenue and Expenditure of Municipalities, 1901 to 1906.**—The following table shews the revenue from various sources, and the expenditure under various heads, of municipalities during each year from 1901 to 1906, inclusive:—

VICTORIA.—REVENUE AND EXPENDITURE OF MUNICIPALITIES, 1901 TO 1906.

Items.		1901.	1902.	1903.	1904.	1905.	1906.
SOURCES OF REVENUE.							
		£	£	£	£	£	£
Taxation	Rates	722,346	784,810	765,910	808,062	802,253	836,024
	Licenses	104,499	105,871	91,977	105,123	112,475	106,621
	Dog fees	14,965	15,446	14,971	15,435	16,022	16,257
	Market and weighbridge dues	49,623	58,113	52,522	52,772	55,259	56,939
Government endowments and grants ...		175,972	99,304	98,609	80,681	90,572	95,090
Contributions for streets, etc. ...		24,999	21,901	21,577	20,485	22,755	18,597
Sanitary charges		48,253	48,332	44,718	50,097	55,731	56,052
Rents		54,117	56,494	58,081	59,956	60,344	63,242
Other sources		89,210	110,263	130,697	117,759	129,810	139,470
Total		1,283,984	1,300,534	1,279,062	1,310,390	1,345,221	1,388,292
HEADS OF EXPENDITURE.							
Salaries, etc.		139,270	139,174	135,730	138,884	136,066	141,438
Sanitary work, street cleaning, etc. ...		132,542	131,847	125,535	126,219	131,378	135,466
Lighting		86,059	97,414	68,665	69,877	69,915	72,571
Fire brigades' contributions		16,769	15,884	16,530	16,668	16,061	17,431
Public works	Construction	244,315	195,487	131,508	167,919	198,275	217,346
	Maintenance	345,334	340,791	330,897	360,831	378,859	403,791
Formation of private streets, etc. ...		23,350	22,197	19,307	19,504	23,676	19,627
Redemption of loans		27,745	32,015	50,146	43,959	55,866	49,483
Interest on loans		197,810	195,186	193,638	191,310	186,439	188,111
Charities		13,407	13,277	12,431	13,117	13,185	13,637
Other expenditure		103,408	112,454	113,842	142,460	134,023	118,748
Total		1,330,004	1,295,726	1,198,229	1,290,748	1,343,743	1,377,649

6. **Number and Assessment of Properties Rated 1905-6.**—The number of properties rated and the annual assessment thereon in cities, towns, boroughs, and shires, in the financial year 1905-6, were as follows :—

VICTORIA.—NUMBER AND ASSESSMENT OF PROPERTIES RATED, 1905-6.

Ratable Values.	Number of Properties Rated.			Assessment of Properties.		
	In Cities, Towns, and Boroughs.	In Shires.	Total.	In Cities, Towns, and Boroughs.	In Shires.	Total.
	No.	No.	No.	£	£	£
Under £25 ...	148,373	125,806	274,179	3,028,065	2,486,591	5,514,656
£25 to £50 ...	36,677	40,172	76,849			
£50 to £75 ...	8,428	12,151	20,579	766,858	1,231,471	1,998,329
£75 to £100 ...	3,585	6,745	10,330			
£100 to £200 ...	4,078	7,028	11,106	539,909	922,449	1,462,358
£200 to £300 ...	1,086	1,428	2,510	1,329,593	1,490,207	2,819,800
£300 to £400 ...	470	510	980			
£400 to £500 ...	242	288	530			
£500 and upwards	679	718	1,397			
Total ...	203,618	194,842	398,460	5,664,425	6,130,718	11,795,143

7. **The Melbourne and Metropolitan Board of Works.**—This Board was established by an Act passed at the end of the year 1890, and entered upon its duties in June, 1891. The Board consists of forty members, one of whom is a chairman elected every four years by the other members, the retiring chairman being eligible for re-election. Nine members

are elected by the Melbourne City Council, four by the South Melbourne Council, three by the Prahran, two each by the Fitzroy, Richmond, St. Kilda, and Collingwood, and one each by the other suburban municipal councils. The district over which the Board exercises control consists of twenty cities, towns, and boroughs, and four shires, comprising a total area of 84,347 acres, and containing an estimated population on the 31st December, 1906, of 513,000. The waterworks for the supply of Melbourne and suburbs were originally carried out by the Government, which had for that purpose contracted loans amounting to £2,389,934; these works were vested in the Board in 1891. The primary object of the creation of the Board was not, however, to take over these works, but was to supply the long called for and pressing want of a sewerage system for the metropolis. The plans and estimates of the cost of the metropolitan sewerage were originally prepared by an expert civil engineer from England, and were furnished to the Board on its creation. The plan recommended by the designer and selected by the Board's engineer-in-chief was estimated to cost £5,030,000, but this plan was modified by the engineer-in-chief, with the concurrence and assistance of the Board, so as to reduce the estimated cost to £3,451,000, and plans were made and the work carried out accordingly. The original plan and estimate contemplated only the construction of the main sewers, but this was altered by Parliament, which added the duty of constructing branch sewers and of treating right-of-ways as streets and sewering them likewise, an obligation which added considerably to the original estimate. To carry out its work the Board is authorised to borrow £7,750,000, exclusive of the loans contracted by the Government for the purpose of waterworks and taken over by the Board. The liability on Government loans on the 30th June, 1907, was £1,688,663, and for loans raised by the Board was £7,951,000. At the same date the Board was still empowered to borrow £500,271 before reaching the limit of its borrowing powers.

(i.) *Total Expenditure on Water Supply and Sewerage, 1853 to 1906-7.* The subjoined table shews the total expenditure on construction and maintenance of water supply and sewerage from 1853 to 1907. The figures given include proportion of salaries, law costs, advertising, travelling expenses, etc.:—

MELBOURNE AND METROPOLITAN BOARD OF WORKS.—TOTAL COST OF CONSTRUCTION AND MAINTENANCE OF WATER SUPPLY AND SEWERAGE, 1853 TO 1907.

Period.	Water Supply.		Sewerage.			Total.
	Construction.	Maintenance.	Construction.	Maintenance.	Working Expenses.	
	£	£	£	£	£	£
1853 to 1890-1 ...	3,378,246	149,623	...	...	...	3,527,869
1890-1 to 1899-1900	322,627	46,677	3,182,046	[1]20,411	[1]21,065	3,592,826
1900-1	16,332	19,410	405,619	13,323	11,260	465,944
1901-2	17,058	22,205	410,760	10,965	13,430	474,418
1902-3	12,925	22,980	409,232	12,095	14,495	471,727
1903-4	10,457	21,990	395,104	12,794	13,861	454,206
1904-5	8,990	20,095	472,384	4,887	21,946	528,302
1905-6	16,045	20,079	414,310	5,405	23,360	479,199
1906-7	26,023	21,523	336,799	5,669	27,545	417,559
Total ...	3,808,703	344,582	6,026,254	85,549	146,962	10,412,050

1. From the 30th June, 1897, to the 30th June, 1900.

(ii.) *Revenue and Expenditure of Melbourne and Metropolitan Board of Works.* The following table shews the actual receipts and expenditure, and also the loan receipts and expenditure of the Board during each year from 1901 to 1907, inclusive:—

MELBOURNE AND METROPOLITAN BOARD OF WORKS.—REVENUE AND EXPENDITURE DURING EACH YEAR, 1900-1 TO 1906-7.

Particulars.		1900-1.	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.
ORDINARY RECEIPTS.								
		£	£	£	£	£	£	£
Water supply		164,271	171,956	179,885	167,036	181,890	186,179	214,834
Sewerage		115,058	124,696	148,641	161,030	171,448	192,518	216,236
Live stock—Metropolitan farm ...		13,464	19,929	35,568	26,970	38,559	42,078	...
Interest	Water supply	82	...	17	19	...	...	20
	Sewerage ...	15,512	17,448	18,605	25,037	26,988	23,785	20,635
Total		308,387	334,029	382,716	382,092	418,885	444,560	451,725
ORDINARY EXPENDITURE.								
General management		35,225	33,621	33,933	32,513	31,081	31,484	31,094
Live stock—Metropolitan farm ...		10,945	16,702	25,718	23,345	23,985	29,050	...
Maintenance ...	Water supply	19,411	22,205	22,980	21,990	20,095	20,079	21,523
	Sewerage ...	24,582	24,396	26,590	26,655	26,833	28,765	33,214
Interest	Water supply	104,069	102,670	102,959	104,114	101,999	102,081	101,628
	New offices ...	...	...	...	...	932	932	932
	Sewerage ...	179,720	192,952	206,964	226,861	239,929	257,059	263,410
Total		373,952	392,546	419,144	435,478	444,854	469,450	451,801
LOAN RECEIPTS.								
Water supply		2,636	1,636	2,855	2,103	1,583	1,937	2,492
Sewerage		76,964	88,425	87,664	88,164	96,588	84,020	79,087
Proceeds of loans		645,148	403,258	722,641	950,927	189,696	346,519	395,085
Miscellaneous		...	...	215	152	332	16,204	12,333
Total		724,748	493,319	813,375	1,041,346	288,199	448,680	488,997
LOAN EXPENDITURE.								
Water Supply construction ...		16,332	17,058	12,925	10,457	8,990	16,045	26,018
Sewerage construction		394,774	410,760	409,232	395,104	472,384	414,310	336,799
Expenses in floating and redemption of loans		280,457	5,200	21,181	533,662	2,457	75,529	162,939
Miscellaneous		3,533	2,727	23,641	15,014	5,143	4,783	5,898
Total		695,096	435,745	466,979	954,237	488,974	510,667	531,654

8. **Melbourne Metropolitan Water Supply.**—From the year 1835 to 1857 the inhabitants of Melbourne depended for their water supply entirely upon rainwater caught in tanks, or upon water carts filled from the River Yarra above the falls. In 1848 the city council appointed a committee to enquire into and report generally upon the water supply and sewerage of the city; this committee recommended that a comprehensive system of sewerage should be carried out, and a rate levied for that purpose; the stringent enforcement of provisions as to slaughtering stock and as to the removal of refuse; that the space between Melbourne and the beach be cleared so as to allow the free access of pure sea air; that a Building Act should be passed and that the streets should henceforth be formed of a uniform width. Most of these recommendations were carried out. A Building Act was passed in 1849, and the filthy lanes in the city were formed and drained. In 1845 the first proposal was made to supply the city with water, by means of a water-wheel to be worked by the Yarra Falls. Five years later a small steam engine was erected to pump water into a tank situated in Flinders Street, from which water was drawn by carts, and in 1851 an elaborate report was issued by the city surveyor, recommending a plan for the city water supply which was soon afterwards adopted. The source

from which it was proposed to conserve the water for the supply of Melbourne consisted of several creeks and springs which flow from Mount Disappointment, about thirty-two miles north of the metropolis, and which when united form the Plenty River; this scheme was adopted and has resulted in the Yan Yean Reservoir scheme. In 1853 the duty of supplying water to the metropolis was transferred from the city council to the Commissioners of Sewers and Water Supply, and towards the end of the same year the work of construction of the Yan Yean system was commenced. On the 31st December, 1857, the first water was turned on by Major-General McArthur, acting for the Governor, Sir Henry Barkly, K.C.B.

(i.) *Development of System, 1857 to 1907.* The following statement shews the development which has taken place in the water supply system of Melbourne during the first fifty years since its inception:—

MELBOURNE WATER SUPPLY SYSTEM, 1857 AND 1907.

Year.	Served Population.	Capital Cost.	1000 Gallons, Charge per—	Rate in £	Mains & Pipes, Mileage of—	Supply in Gallons, Average daily
		£				
1857	95,442	748,974	10/- and 6/-	1/-	104	3,250,000
1907	535,000	3,793,389	1/-	7d.	1,273	33,480,000

(ii.) *Proposed Extensions.* The water supply committee of the Metropolitan Board of Works has recently recommended that, with a view to obtaining additional water from the Maroondah system—estimated at 7,000,000 gallons a day—the aqueduct be raised eighteen inches in those portions not already completed. The committee has also recommended the augmentation of the catchment area by permanently reserving two areas amounting in all to 140 square miles—the one comprising the Upper Yarra watershed, eighty-one square miles in area; the other comprising the O'Shanassy River district, fifty-nine square miles in extent.

(iv.) *Description of Water Supply Systems.* The water supply of Melbourne consists of two main systems—the Yan Yean and the Maroondah.

(*a*) *The Yan Yean System* is the main source of supply. It commences by collecting the water from the Silvery and Wallaby Creek valleys, to the north of Mount Disappointment, 2700 feet high, which forms one of the promininent heights of the main Dividing Range in Victoria. The waters of the Silvery Creek are brought by means of an aqueduct a little over eight miles long, constructed at a cost of £55,000, to a weir at the head of the Wallaby Creek aqueduct, which carries the combined waters of the two creeks for a distance of five and a quarter miles, and discharges over the crest of the Dividing Range at a height of 1694 feet above sea level, and then drops a height of 133 feet in 683 feet into Jack's Creek, one of the branches of the Plenty River. The Wallaby Creek aqueduct was constructed at a cost of £54,000. Its carrying capacity is 33,000,000 gallons a day, while the average daily flow of the combined Silvery and Wallaby Creeks is 12,000,000 gallons. From its drop into Jack's Creek the water follows the natural bed of the stream for about three miles to the Tourourrong reservoir, which is a small reservoir of about thirty-six acres in extent, and having a capacity of 60,000,000 gallons. From Tourourrong the clear water channel carries the water for a distance of four and three-quarter miles to the old Plenty inlet channel of the Yan Yean reservoir. This channel is 13 feet 6 inches wide and 4 feet 6 inches deep, the section being a quadrant of a circle of 4 feet 9 inches radius, with one to one side slopes. The fall of this channel is 7 feet 6 inches to the mile, with a carrying capacity of 12,000,000 gallons per day, constructed at a cost of £68,000. In it there are waterfalls, the heaviest of which is 17 feet. The water from the old Plenty channel enters the Yan Yean reservoir through a spur, forming its western bank, by means of a tunnel 1000 feet long. The Yan Yean reservoir, which is twenty-two miles from the city, is formed by the construction of an earthen bank 49 chains long, 30 feet high, 20 feet wide on top, with a slope next the water of three to one, and an outside slope of two to one. The bywash is five feet below the top of the embankment, at a level of 602 feet above low-water mark in Hobson's Bay. The reservoir, when full, covers an area of 1360 acres, with a maximum depth of 26 feet, and an average depth of 18 feet. Its total capacity is 6,400,000,000 gallons, of which 5,400,000,000 gallons are available for consumption. From the Yan Yean reservoir to the Pipe Head dam at Morang, a distance of seven miles, an open aqueduct capable of delivering 33,000,000 gallons a day has been constructed. From the Morang reservoir, the bywash of which is 485 feet above sea level, a 30-inch cast-iron main, 27-inch cast-iron and a 30-inch wrought-iron main carry the water a distance of seven miles to the storage reservoir within the metropolitan area, at Preston. The Preston reservoir is constructed partly in excavation and partly in bank; it is 20 feet deep, and holds 16,000,000 gallons. The by-wash is 328 feet above the sea level, and the cost was £11,000. This is the main distributing reservoir of the central city supply.

(*b*) *Maroondah System.* The water for this system is obtained from the Watts River, a tributary of the Yarra. The waters of the Graceburn are picked up by a small weir 686 feet above sea level, and carried for a distance of three-quarters of a mile in a concrete-lined channel to a well near the main road leading from Healesville to Marysville. From this well an 18-inch wrought-iron pipe, one and a quarter miles long, leads the water to the main Maroondah aqueduct. The completed Maroondah scheme involves a storage reservoir with a dam 105 feet high, calculated to store 2,000,000,000 gallons of water. This dam has not yet been constructed, as the natural flow of the creeks, together with the storage in Yan Yean reservoir, has proved quite capable of providing all the water at present required for the metropolis. A temporary weir of Portland cement concrete has been constructed across the Watts River, from which point the water is led in an aqueduct forty-one miles long to the Preston reservoir, where it joins the water from the Yan Yean system. The channel is capable of delivering 25,000,000 gallons daily, the cross section being a quadrant of three feet ten inches radius with one to one slopes and a fall of one foot to the mile. The valleys are crossed by wrought-iron syphons, and with the exception of the Plenty River, which is crossed on a wrought-iron girder bridge, all the syphons are laid under the beds of streams. Each syphon is provided with a scour pipe large enough to take the full flow of the aqueduct, enabling the water to be directed down any of the natural water courses when it becomes necessary to empty any length of the aqueduct for cleansing purposes.

(*c*) *High Level System.* Besides the Yan Yean and Maroondah systems, the high levels of the eastern suburbs of Melbourne are provided for by a direct main from the Yan Yean reservoir. This main is thirty-two inches in diameter, constructed of wrought-iron plates from ¼ inch to 7/16 inch thick, 20½ miles long, and cost £190,000. The discharge is about 9,000,000 gallons per day. There is a storage reservoir of 9,000,000 gallons capacity at Surrey Hills, the by-wash of which is 430 feet above sea-level.

(v.) *Catchment Areas, Reservoirs, and Aqueducts.* (*a*) *Drainage Areas.* The whole of the catchment areas are absolutely free from population or cultivation. The Government pursued the policy of gradually purchasing all private rights over the various watersheds, which policy the Board has carried on and completed; the original owners have been bought out, while the township of Fernshaw, in the Maroondah system, was entirely purchased and obliterated. The present drainage areas from which the water is delivered cover the following areas:—

MELBOURNE WATER SUPPLY.—CATCHMENT AREAS, 1907.

	Silver and Wallaby Creeks.	Plenty River.	Yan Yean Reservoir Catchment.	Maroondah Catchment.	Total.
Area in acres	11,500	10,500	4,500	35,500	62,000

All the water is delivered by gravitation, no pumping being required in any portion of the area supplied.

(*b*) *Storage Reservoirs.* Within the metropolitan area there are six storage reservoirs having a total capacity of 45,000,000 gallons. From the Preston reservoir a number of service mains lead into the reticulation system of the metropolis. The total daily quantity of water which can be sent into Melbourne is as follows:—

MELBOURNE WATER SUPPLY.—MAXIMUM DAILY SUPPLY WHICH CAN BE DELIVERED.

System.	Yan Yean.	Maroondah.	High Level Main.	Total Supply.
Gallons per day	33,000,000	25,000,000	9,000,000	67,000,000

(*c*) *Aqueducts.* Up to the 31st December, 1906, about 187 miles of 12 inch to 48 inch mains and 992 miles of reticulation mains, below 12 inch, had been laid, in addition to which there were seventy-five miles of aqueducts and syphons, or a total length of aqueducts, mains, and reticulation pipes of 1254 miles.

(vi.) *Quantity of Water, Number of Houses, and Population Supplied, 1901 to 1907.* The following table gives various particulars shewing the increase in the supply of water in Melbourne and suburbs from 1901 to 1907, inclusive:—

MELBOURNE WATERWORKS.—NUMBER OF HOUSES, POPULATION, AND WATER SUPPLIED, 1901 TO 1907.

Year Ended 30th June.	Number of Houses Supplied.	Estimated Population Supplied.	Average Daily Supply.	Total Supply for the Year.	Average Daily Supply.		Rate Levied.	Assessments of Tenements Served by Metropolitan Water Supply.
					Per House.	Per Head of Estimated Population.		
	No.	No.	Gallons.	Gallons.	Gallons.	Gallons.		£
1901 ...	103,818	498,030	28,190,002	10,289,350,730	271.5	57.5	6d. in the £	3,479,721
1902 ...	103,951	502,120	29,466,139	10,755,140,735	283.4	59.0		3,650,573
1903 ...	104,885	502,060	29,127,018	10,631,361,570	277.7	58.0		3,830,872
1904 ...	107,701	504,960	28,902,080	10,549,259,200	268.3	57.6		4,004,543
1905 ...	109,393	511,900	29,522,502	10,775,713,230	269.9	58.5		4,061,258
1906 ...	111,494	521,000	32,453,050	11,845,363,250	291.1	63.4		4,090,890
1907 ...	114.049	530,700	33,479,870	12,220,152,550	293.5	64.3	7d. in the £	4,309,278

(vii.) *Total Cost of Construction, Revenue, Expenditure and Net Profits, 1854 to 1907.* The following table shews the total cost of construction, the revenue, expenditure, and net profits up to the 30th June, 1900, and for each financial year from 1901 to 1907, inclusive:—

MELBOURNE WATERWORKS.—CONSTRUCTION, COST, REVENUE, EXPENDITURE AND NET PROFITS, 1854 TO 1907.

Year Ended the 30th June.	Capital Cost.[1]	Annual Revenue.[2]	Annual Expenditure on Maintenance and Management.[3]	Percentage of Expenditure to Revenue.	Interest.[4]	Net Profit after Payment of Expenditure and Interest.
	£	£	£	%	£	£
Total to 1900	3,700,873	4,672,030	749,798	...	1,938,868	1,983,364
1901 ...	14,330	163,212	38,548	23.61	103,988	20,676
1902 ...	16,053	171,889	40,156	23.36	102,670	29,063
1903 ...	10,413	169,295	40,257	23.78	102,942	26,096
1904 ...	8,649	165,457	37,374	22 59	104,096	23,987
1905 ...	1,391	184,529	31,761	17.21	102,465	50,303
1906 ...	16,562	182,926	28,016	15.31	102,548	52,362
1907 ...	25,119	211,059	30,573	14.49	102,075	78,411
Total ...	3,793,390	5,920,397	996,483	...	2,659,652	2,264,262

1. Works commenced in 1853. 2. Revenue commences in 1854. 3. Returns for expenditure commence in 1859. 4 First interest paid in 1856. Graphs relating to the water supply of Melbourne may be found on page 859 hereinafter.

9. **Melbourne Sewerage.**—As stated above, the chief object of the creation of the Melbourne and Metropolitan Board was to carry out an efficient system of sewerage. Old Melbourne used to be a city of cesspits, and it was not until the latter sixties that these were abolished, filled up, and the movable pan system gradually adopted throughout the whole metropolitan area with night removal. The cost of removal in 1894 was about £90,000, equal to a capital expenditure of £1,750,000. This objectionable system has been displaced by the water carriage system throughout a large portion of the metropolis, and in other parts the work of reticulation is now proceeding. A considerable part of central Melbourne is below the 10 foot contour and was originally full of swamps, which were sources of danger to the public health. All these swamps have now been filled up, and the abolition of the accumulations of stagnant water has effected a very great improvement in the health of the city and suburbs. The sewerage system is designed to carry off all water used in water closets, lavatories, baths, and urinals, together with all chamber slops and water used in cooking, washing clothes and floors, and from sinks in kitchens and sculleries, drainage from stables and cow houses, together with all liquid refuse, which in the opinion of the Board will not prejudicially affect the sewers, the machinery, or the sewage farm. Rainfall from the streets flows into the river and is not taken into the sewers, which are designed to provide for 30 cubic feet per head per day from the assumed future population, calculated on the basis of a population of 1,000,000 people ultimately settled on the areas now capable of being connected with the pumping station.

(i.) *Description of Sewerage Systems.* The whole of the sewage of the metropolis is being gradually collected by means of two principal main sewers leading to the pumping station at Spotswood. The first house was connected in August, 1897, and on the 11th November, 1907, a total number of 90,519 tenements had been connected, while at the same date 935 tenements were in process of connection. The 4-inch and 6-inch reticulation sewers in the rights-of-way join the 9-inch street reticulation pipes, which are gradually collected into 12-inch, 15-inch, and 18-inch stoneware pipes, and then again into brick and concrete branch sewers which join the mains and sub-mains. On the 31st December, 1906, the sewerage system, including mains, had been laid in the following districts:—Port Melbourne, South Melbourne, Melbourne, Richmond, and nearly the whole of Footscray, Prahran, St. Kilda, Fitzroy, Hawthorn, and Collingwood. The greater part of Essendon, Caulfield, Malvern, Kew, and Camberwell has been dealt with. Work has also been done in Brunswick, Williamstown, and Brighton, and is now proceeding in all these municipalities in which the system has not been completed. The two main systems are:—

(a) *The South Yarra System*, which provides for Brighton, Caulfield, St. Kilda, Malvern, Prahran, Hawthorn, Kew, Richmond, Collingwood, South Melbourne, and Melbourne, except Carlton; and

(b) *The North Yarra System*, which provides for Heidelberg, Preston, Northcote, Coburg, Brunswick, Fitzroy, Carlton, North Melbourne, Essendon, and Footscray.

When collected at Spotswood the two systems are dealt with in separate buildings, and are arranged to be worked either separately or unitedly. The sewage enters the pumping station through straining wells, one of which is established on each system; the wells are 22 feet internal diameter, and each contains two straining cages, one of which is always in position. The solid matter caught in them is transferred to a dryer in the building over the wells, where it is subject to steam pressure and consequently to a high temperature, which renders the material innoxious. The material from the dryer is of no manurial value and is destroyed in a furnace. The sewage is raised by the pumps about 125 feet to the head of the outfall sewer, through about two and three-quarter miles of 6-feet and 4-feet wrought-iron rising mains, whence it gravitates to the Werribee sewage farm, a distance of 15¾ miles, through a partly-open and partly-closed channel eleven feet in diameter, with a fall of about two feet to the mile. The full capacity of this outfall sewer is 18,000 cubic feet a minute.

(ii.) *Metropolitan Sewage Farm.* The farm contains 8847 acres, situated on the western side of the Werribee River. The price paid for the land was £17 10s. per acre. About £270,000 has been spent on the property in perfecting the arrangements for the distribution of sewage. The cost of the farm to date, therefore, is approximately £425,000. About 22,000,000 gallons of sewage have to be disposed of every twenty-four hours in irrigating the fields. It is spread over properly-prepared blocks of land by a series of main and lateral carriers. The effluent, after filtering through the land, is discharged into Port Phillip Bay in a clear and transparent condition, all the sewage held in suspension being left in the soil. The main supply channels for carrying the sewage on to the fields are about ten chains apart, and a good system of open drains to carry off the surplus water is provided. Many of these drainage channels are ten feet to twelve feet wide at the top and seven feet deep, and through them the water drained off from the subsoil is constantly flowing to the bay. The prepared blocks on the farm are laid down with prairie grass and lucerne, on which sheep are depastured. During the financial year 1906-7 61,728 sheep were bought, at a cost of £42,765, other expenses amounting to £4511. During the same period the total receipts from the sale of wool, skins, and 44,757 sheep amounted to £47,349. The profit on sheep for the year amounted to £11,948.

(iii.) *House Connections.* The work of house connections with the sewerage system is carried out under a carefully prepared by-law. Under the Amending Act of 1897, after a property has been declared to be a sewered property, the owner has several options. (a) He may submit a plan of his house connections for approval, and on approval being given, may agree to carry out the work within one month. (b) He may submit a plan, which, if approved of, he may ask for an estimate of the cost of carrying out. This the Board is bound to supply, and then the owner may either carry out the work himself or ask the Board to carry out the work, which it must do for the estimated price, whether the work costs less or more. (b) .On default of the owner the Board may carry out the work, and at the request of the owner accept payment by forty quarterly instalments, bearing interest on such portion as from time to time remains unpaid at the rate of 5 per cent.

(iv.) *Number of Houses Connected, Capital Cost, Revenue and Expenditure, 1901 to 1907.* The following table gives particulars as to the number of houses connected to the sewerage system, the total capital cost, and the receipts and disbursements during each year from 1901 to 1907, inclusive:—

MELBOURNE SEWERAGE WORKS.—TENEMENTS CONNECTED, CAPITAL COST, RECEIPTS AND DISBURSEMENTS, 1901 TO 1907.

Year ended the 30th June.	Number of Houses Connected.	Capital Cost.	Receipts.			Maintenance and Working Expenses.
			From Rates.	From other Sources.	Total.	
	No.	£	£	£	£	£
1901 ...	38,696	3,307,135	109,790	7,786	117,576	24,582
1902 ...	47,029	3,609,596	119,222	8,700	127,922	24,396
1903 ...	55,727	3,921,208	141,994	16,497	158,491	26,590
1904 ...	64,487	4,214,812	154,857	11,799	166,656	26,696
1905 ...	71,689	4,639,949	165,500	20,522	186,022	26,906
1906 ...	79,597	4,980,335	185,803	19,743	205,546	28,828
1907 ...	87,853	5,258,156	209,805	6,504	216,309	33,296

10. **Water Supply in Country Towns.**—By the Water Act 1905, which came into operation on the 1st May, 1906, the control and management of all Irrigation Trusts, with one exception, and of a number of waterworks and water supply districts were centralised, and their works and property vested in the State Rivers and Water Supply Commission, to whom many of the duties of the Water Supply Department were also handed over. Further information with regard to this Commission and to the works and districts under its control are given in the section in this book dealing with Irrigation and Water Supply. There are, however, in different parts of Victoria a number of other waterworks which are concerned chiefly with domestic supply, and which are controlled by local authorities, *i.e.*, by Waterworks Trusts or by municipal corporations. These works are constructed out of moneys either granted or lent by the general Government. The following gives particulars as to the waterworks under the control of Trusts and municipal corporations for each year from 1901 to 1906, inclusive :—

VICTORIA.—COUNTRY WATERWORKS UNDER TRUSTS AND MUNICIPAL CORPORATIONS, 1901 TO 1906.

Year.	Waterworks Trusts.						Municipal Corporations.*			
	Number of Trusts.	Capital Cost.	Capital Indebtedness.	Interest Outstanding.	Receipts.	Expenditure.	Number of Corporations.‡	Capital Cost.	Capital Indebtedness.	Interest Outstanding.
	No.	£	£	£	£	£	No.	£	£	£
1901...	76	823,418	748,089	†	†	†	24	†	470,041	†
1902...	76	935,286	754,447	†	†	†	24	687,317	476,952	†
1903†	...	...	...	...	...	...	...	...	...	...
1904...	73	1,051,424	775.701	18,520	†	†	24	675,161	479,815	2,133
1905...	74	1,068,985	786,505	19,520	71,654	71,876	23	669,438	471,998	3.107
1906...	78	1.367,565	905,336	17,029	89,083	86,764	23	669,684	466,395	2,586

* Particulars as to the receipts and expenditure in respect of waterworks under the control of municipal corporations are not available. † Returns not available. ‡ Excluding works constructed by the corporations of Ballan and Melton out of the shire funds.

Under the provisions of the Local Government Act 1903 municipal councils are authorised to construct and maintain tanks, dams, and reservoirs, and must maintain existing works for the gratuitous supply of water. They are also empowered to accept the management and control of new waterworks within their respective localities, and may, with the consent of the Governor, construct or purchase new works within or without their locality. Councils are also authorised to enter into contracts for the supply of water for any period not exceeding ten years with the owners of any waterworks. Every municipality may levy a special water rate for water supplied, or for the purpose of constructing waterworks or paying the interest on any loan contracted by the council for such purpose, but the amount of the loan must not exceed in any year the sum of two shillings in the pound, provided that a minimum sum of ten shillings may be fixed by the council to be paid in respect of any property at which water is supplied.

11. **Fire Brigades.**—Under the Fire Brigades Act of 1890 a metropolitan fire district and nine country fire districts were established, the former being placed under the control of a Metropolitan Fire Brigades Board, and the latter under the control of a Country Fire Brigades Board.

(i.) *Metropolitan Fire Brigades Board.* The metropolitan fire district originally comprised the area included in the several municipalities within a radius of ten miles from the Melbourne General Post Office, but this area has since been extended in certain directions so as to include the greater part of the Shire of Moorabbin and also the township of Mordialloc. The Board is composed of nine members, of whom three are appointed by the Governor-in-Council, three by the municipal councils, and three by the insurance companies. On the 31st December, 1906, the Board had under its control 49 stations, 174 permanent men, 160 auxiliary firemen, 10 steam fire engines, 2 gasolene engines, 95,128 feet of hose, and 114 fire-alarm circuits having 139 fire-alarm points and 413 fire-alarm and telephone points. The total length of wire in use outside stations for fire alarms and telephones is about 290 miles.

(ii.) *The Country Fire Brigades Board.* This Board consists of nine members, of whom three are appointed by the Governor-in-Council, two are elected by the municipal councils of the districts where there are brigades registered under the Board, two by the fire insurance companies, and two by the registered fire brigades. At the end of the year 1906 there were eighty-seven municipal councils and fifty-two insurance companies included in the operations of the Board. All the brigades are volunteer brigades, but in the large towns permanent station-keepers and watchmen are employed. There were about 97 registered brigades and 1995 firemen at the end of the year 1906. At the same date the plant consisted chiefly of 5 steam engines, 60 manual engines, 10 horse brakes, 61 apparatus carriages, 3 fire escapes, and about 140,000 feet of canvas hose.

(iii.) *Financial Operations of Both Boards.* The following table gives particulars as to the financial operations of both Boards during each year from 1901 to 1906, inclusive:—

VICTORIA.—REVENUE AND EXPENDITURE OF METROPOLITAN AND COUNTRY FIRE BRIGADES BOARDS, 1901 TO 1906.

Particulars.	1901.	1902.	1903.	1904.	1905.	1906.
ORDINARY RECEIPTS.						
	£	£	£	£	£	£
Contributions	48,494	49,280	49,002	48,874	49,083	50,937
Receipts for services	1,844	2,062	727	692	754	551
Interest and sundries	2,324	1,954	4,626	2,814	3,442	3,080
Total	52,162	53,296	54,355	52,380	53,279	54,568
ORDINARY EXPENDITURE.						
Salaries	22,000	22,865	23,112	23,103	24,793	25,316
Fire expenses	2,917	3,027	2,873	2,936	2,990	3,041
Horses, quarters, etc.	13,654	13,009	12,002	9,207	10,930	9,596
Plant—Purchase and repairs ...	4,403	2,866	4,862	4,305	4,589	6,560
Interest	6,087	6,080	6,073	6,057	6,103	5,752
Sinking fund	2,000	1,971	2,028	2,250	2,250	2,250
Miscellaneous	1,001	1,087	2,221	4,332	2,108	4,310
Total	52,064	50,905	53,171	52,190	53,763	56,825
LOAN EXPENDITURE—						
Sewerage connections	...	...	...	...	405	3,250

12. **The Melbourne Harbour Trust.**—This Trust was constituted under an Act passed in 1876, as a result of public agitation and demands extending over a period of thirty-four years, to the effect that the cost of landing goods should be reduced, and the delays in receiving goods should be abolished. Both demands arose from the fact that vessels of a draught greater than twelve feet had to discharge in the bay into lighters.

(i.) *Constitution of the Trust.* The Harbour Trust Act was drafted on the lines of similar institutions in Great Britain, such as the Thames Conservancy, the Mersey Harbour Board, and the Clyde Trust. Under the Act of 1876, as amended in 1883, the number of Commissioners is fixed at seventeen, nominated or elected as follows:—Five were nominated by the Governor-in-Council, three elected by merchants, three by shipowners, two were elected by the City Council, and one each by the ratepayers of South Melbourne, Port Melbourne, Williamstown, and Footscray. The sum of £1700 per annum was set aside for the remuneration of the Commissioners.

(ii.) *Works Undertaken by Trust in the River and in the Port.* In 1879 a report dealing with various propositions for the improvement of the port and harbour was issued by Sir John Coode, an English engineer, who had been engaged by the Commissioners for the purpose. This report, which recommended (i.) the cutting of a new channel through the flats to the south of Fishermen's Bend, (ii.) the construction of a dock, and (iii.) the widening and deepening of the channel in the river, was adopted by the Commissioners, who were empowered in 1883 to borrow the amount of £1,000,000 for the purpose of carrying out the necessary works. In 1890 a consolidating Act was passed, and the borrowing powers of the Trust were increased to £2,000,000. The river was widened from Queen's Bridge to the bay from about 140 to about 300 feet, while the depth has been gradually increased until at the present time it is twenty-six feet at low water.

(*a*) *The Coode Canal.* In 1886 the canal across the flats below Fishermen's Bend was completed at a cost of £96,000. The length of the canal is 2602 yards, the distance from Queen's Bridge to the river entrance being thereby reduced from seven miles to five and three-quarter miles, and the navigation being greatly facilitated. At the present time this channel, which is called the Coode Canal, is being widened 100 feet, which will make its total width 408 feet, and its width at low water 366 feet.

(*b*) *The Victoria Dock.* This dock, opened in 1892, has an area of ninety-six acres and a depth of twenty-six feet at low water. There are 9000 feet of wharfage, and the total cost, including wharfs, sheds, and approaches thereto, was £416,038. The sheds have a total length of 12,000 feet, and cover an area of 568,070 square feet.

(iii.) *Works in the Bay.* Prior to 1889 all the mail steamers and vessels of heavy draught had to lie at anchor in the bay, and there discharge into lighters. One of the first works undertaken by the Commissioners was to make the railway piers at Williamstown available to these vessels. This work was completed at a cost of £256,160. In 1893 a channel over 8000 feet long and 600 feet wide was constructed, running in a southerly direction from Port Melbourne Railway Pier and having a navigable depth of twenty-eight feet. The cost of this work was £218,379.

(iv.) *Dredging.* The total amount of material raised by the dredging and excavation done in the improvement of the river and bay and the method in which the material has been disposed of are as follows:—

Material Dredged.	Cubic Yards.	Material Disposed of.	Cubic Yards.
From river and Victoria dock	22,639,866	Landed for reclamation ...	9,728,068
From bay	12,994,685	Deposited in deep water ...	25,906,483
Total	35,634,551	Total	35,634,551

During the past ten years the average cost of dredging per cubic yard was 2.11 pence, and the cost of towing and depositing 3.17 pence, not allowing for depreciation of plant. The Trust has expended £224,970 in reclaiming land within its jurisdiction. The amount of material raised annually is now about 1,200,000 cubic yards.

(v.) *Financial Operations.* The revenue of the Trust is obtained from wharfages and quayage rates, rents and license fees from lands and ferries, and other license fees. One-fifth of the revenue of the Trust is paid to the consolidated revenue of Victoria. The following table gives particulars of the revenue and expenditure of the Trust from 1901 to 1906, inclusive :—

MELBOURNE HARBOUR TRUST.—REVENUE AND EXPENDITURE, 1901 TO 1906.

Particulars.	1901.	1902.	1903.	1904.	1905.	1906.
REVENUE.						
	£	£	£	£	£	£
Rates and rents	196,294	198,497	227,356	226,041	227,282	254,142
Interest	2,658	2,597	2,535	2,851	2,489	2,987
Recoups	1,344	1,690	1,188	2,549	2,174	2,535
Total	200,296	202,784	231,079	230,941	231,945	259,664
EXPENDITURE.						
Wharfage refunds	4,106	1,859	1,568	1,502	1,054	796
Consol. revenue of Victoria ...	38,419	38,798	45,607	44,145	45,164	51,204
Wharfage drawback	6,576	6,162	6,296	8,627	1,175	...
Maintenance and management...	46,713	47,131	36,076	46,011	51,714	52,519
Interest on loans	88,135	88,235	87,982	86,869	86,630	86,530
Dredging (construction) ...	10,106	11,926	17,496	10,219	6,630	7,182
Wharf " ...	13,709	16,071	9,123	2,149	1,012	1,021
Total	207,764	210,182	204,148	199,522	193,379	199,252
PROFIT OR LOSS.						
Profit	...	...	26,931	31,419	38,566	60,412
Loss	7,468	7,398	...	...	...	...

§ 4. Queensland.

1. **Development of Local Government Systems.**—The first step in the direction of local government in Queensland was the incorporation of Brisbane as a municipality by proclamation on the 6th September, 1859, about three months prior to the separation of that State from New South Wales. The provisions of the Municipalities Act, which was passed in the mother colony in 1858, and which has already been referred to, applied to settlement in the Moreton Bay district, and were amended by an Act of the Queensland Government in 1861. Three years later the provisions of these two Acts were amended and consolidated, and authority was given for the incorporation as a municipality of any city or town, or of any rural district, on petition to the Governor signed by at least 100 resident householders. The duties and powers of the councils were extended and additional privileges were conferred under this Act.

(i.) *Inauguration of General System of Local Government.* Various amendments were made in the law from time to time, without, however, altering the main features of the Act of 1864, until the year 1878, when the Local Government Act was passed, and a general system of government by local authorities was inaugurated. In 1879 an Act was passed providing for the local government of areas situated outside the boundaries of municipalities by the constitution of *divisions*. Under these Acts the State was divided into boroughs, shires, and divisions, all of which were placed under the control of councils, the members of which were called aldermen in the case of boroughs and cities, and councillors in the case of shires and divisions. Any country district, or any city or town, with or without its suburbs, could be constituted as a municipality by order of the Governor-in-Council, either upon petition of the inhabitants or without petition. Provisions were made as to the powers and functions of the councils; the qualifications of councillors; the preparation of the voters' roll; the election of councillors, aldermen, and auditors; the election and privileges of the chairman; the proceedings of the council; the appointment and removal of officers and other similar matters. A general rate of not more than one shilling, nor less than sixpence in the £ of the annual improved value of ratable property could be levied, and provision was also made for special or separate rates in the case of works for the special benefit of any particular portion of the district. Power was given to borrow money from the consolidated revenue, and Government grants, by way of endowment, were provided for. By an amending Act, passed in 1890, the rates thenceforward were to be charged on the unimproved capital value of the land, and this system has since been retained. In 1896 a commission was appointed to enquire into the working of the Local Government Acts and to recommend amendments which might be considered desirable; a report subsequently sent in by this commission recommended that increased powers of local government should be granted in certain matters, and to the report was appended a draft Bill which, with certain alterations and curtailments, became the Local Authorities Act of 1902, the provisions of which, together with the amendments in 1903 and 1905, now regulate generally the working of local areas within the State.

(ii.) *The Local Authorities Act 1902.* Considered generally this Act comprises the Local Government Act 1878, and amending Acts, together with the Divisional Boards Act of 1887, the Valuation and Rating Act of 1890, and the Local Authorities (Joint Action) Act of 1886. It does not, however, comprise all the statutes relating to the powers and duties of local authorities, for certain Acts, such as the Tramways Acts and the Health Acts, while conferring powers upon these bodies, deal also with other subjects, and are in the nature of general Acts upon these subjects. The Act of 1902 contains a number of provisions enlarging the powers of local bodies and rendering their duties more explicit; thus the jurisdiction of councils with respect to roads, bridges, wharves, ferries, and reserves is amplified, and provision is inserted for putting under their control, when circumstances warrant it, such public lands as cemeteries, commons, foreshores, and the like. They have enlarged powers as to traffic, the eradication of noxious weeds, the reclamation of lands, the destruction and prevention of pests, the construction of buildings, the prevention of fires, and the control of places of public resort and amusement. They are empowered to establish works for lighting, etc., and to construct tramways in districts and under circumstances to which the existing Tramways Acts are not readily applicable. The proper execution of all these matters requires additional rating, and provision is made therefor in the Act.

2. **Systems of Local Government now in Operation.**—The principal features of previous enactments as to the division of the State into local areas are retained in the Act of 1902, but such areas in the future are to be of two classes—(*a*) towns and (*b*) shires. All municipalities formerly constituted as boroughs become towns, except Brisbane, Rockhampton, and Townsville, which are declared to be cities, and all shires and divisions become shires. The Governor-in-Council may, after giving notice in the *Gazette*, constitute, unite, divide, or abolish areas for the purpose of forming new areas, and may by proclamation constitute a town a city.

(i.) *The Municipal Council.* All local areas are governed by councils, the members of which are called aldermen in the case of towns and councillors in the case of shires.

Town councils are composed of either seven, nine, or eleven members, as declared by order-in-Council, but, if the town has wards, three members are assigned to each ward. *Shire councils* are composed of five, seven, or nine members, as declared by order-in-Council, but, if the shire is divided, the number cannot be more than three for each division, and need not be the same for every division.

(ii.) *Qualification of Aldermen and Councillors.* Every male ratepayer of the age of twenty-one years, if a natural-born or naturalised subject, is qualified to be elected as a member of a council, unless he is an uncertificated insolvent, is undergoing imprisonment, is financially interested in any contract with the council, or is insane. Provision is made for the election of the mayor or chairman, and for the retirement of members by rotation. The first council of a newly constituted town is elected, but that of a newly constituted shire is appointed by the Governor-in-Council, unless otherwise directed by the order constituting the shire.

(iii.) *Qualification of Voters.* Generally every person of either sex of the age of twenty-one, who is a natural-born or a naturalised subject, and is rated as an occupier or owner of ratable land, is entitled to vote. The number of votes depends upon the value of the land in the following scale:—

MUNICIPALITIES.—PLURALITY OF VOTES.

Value of land ...	Less than £500.	From £500 to £1000.	£1000 and upwards.
Number of votes ...	1	2	3

In case of joint owners or occupiers, each is to be considered the owner or occupier of land of a value equal to that of the whole divided by the number of owners or occupiers not exceeding three. If more than three persons are joint owners or occupiers, those whose names stand first on the rate book or valuation or return are to be taken. Companies may nominate their secretaries, managers, or directors for the purpose of voting.

(iv.) *Powers and Duties of Councils.* Generally the council is charged with the construction, maintenance, and management of all roads, streets, bridges, culverts, ferries, wharves, jetties, and other necessary public works, and is invested with powers to acquire land and buildings in connection with a variety of public works and for a number of public purposes. The council also has general power to make by-laws with a view to the good government of the local area under its management. Authority is given to the councils to establish markets and weighbridges and to fix dues for the use of the same; to undertake the manufacture or supply of light or hydraulic or other power; to destroy noxious weeds; and to control the erection of new buildings and the repair of dangerous or neglected ones. The council may also make by-laws with respect to a multitude of matters mentioned with great particularity in a schedule to the Act, and may also exercise various powers conferred by a number of Acts, set forth in the second schedule, such as the Tramways Act 1882, the Water Authorities Act 1891, the Electric Light and Power Act 1896, and the Health Act 1900.

(v.) *Valuation.* All land is ratable except the following:—Crown land unoccupied or used for public purposes; land in the occupation of the Crown, but this does not include lands rented in towns by the Crown; land used for public purposes; commons; cemeteries; and land not exceeding in area fifty acres and used exclusively for public worship, educational purposes, an orphanage, or library. Generally the value is estimated at the fair average value of unimproved land of the same quality held in fee-simple in the same neighbourhood. In the case of land held under gold-mining lease, or under lease from the Crown, the value is deemed to be a sum equal to twenty times the annual rent.

(vi.) *Rates* are levied on the unimproved capital value, and are of two kinds, general and special. *The general rate* must not be greater than threepence in the pound, nor less than a halfpenny, while *special rates* must not exceed threepence in the pound, but this provision does not include separate rates, special water rates, loan rates, cleansing rates, or tramway rates. Special rates may be levied for the purpose of constructing and maintaining permanent works, while separate rates may be declared for defraying expenses incurred in the execution of a work for the special benefit of any particular part of the area. A special rate may also be levied for the administration of the Health Acts.

(vii.) *Loans.* Money may be borrowed by local authorities either from the central Government, from outside sources by means of debentures, or by way of overdraft of current account. *Government Loans.* The total amount that may be advanced by the Treasury, inclusive of sums owing, may not exceed a sum equal to five times the then ordinary annual revenue of the local authority, except in the case of loans for reproductive undertakings, for which special arrangements may be made by application to the Governor-in-Council. Notice of a proposed loan must be published, and, if demand be made by any ratepayers, having in the aggregate twenty votes, a poll must be taken to decide whether the money shall be borrowed or not. *Debentures.* A local authority may apply to the Governor-in-Council for permission to borrow money by the sale of debentures, but application must only be made after a resolution for borrowing the money has been adopted and confirmed, and after an opportunity has been given for the taking of a poll on the question, and (if a poll has been taken) when the result is in favour of the loan. *Temporary loans* from banks may be made by way of overdraft of the current account, but no such overdraft may exceed the ordinary revenue of the local authority in the year then last past.

(viii.) *Tramways.* Any ratepayers, having not less than one-third of all the votes of the ratepayers within any particular area, may by petition request the local authority to apply to the Governor-in-Council for the constitution of such area as a "tramway area." After an opportunity for taking a poll on the question has been given, and (if a poll has been taken) when the result is in favour of the tramway, the petition may be granted by the Governor, who may authorise the issue of a Government loan for the purpose of constructing or purchasing the tramway. The total amount advanced for the purpose must not exceed £3000 for every mile constructed. As regards the repayment of tramway loans, the local authority may levy a tramway rate, and the provisions of the Local Works Loans Acts 1880 to 1889 are incorporated. Particulars as to the working of tramways run by local authorities are given in the section in this book on "Roads and Railways." (See pp. 594 and 595 hereinbefore.)

3. **Area, Population, Number of Dwellings, Rates, Assets and Liabilities of Cities, Towns, and Shires, 1906.**—The following table gives various particulars of different classes of local authorities for the year ended the 31st December, 1906:—

QUEENSLAND.—AREA, POPULATION, NUMBER OF INHABITED DWELLINGS, RATES, ASSETS, AND LIABILITIES OF CITIES, TOWNS, AND SHIRES, 1906.

Local Authority.	Area.	Population.	Inhabited Dwellings.	Capital Value of Ratable Property.	Rates Levied.		Assets.	Liabilities.	
					General.	Special or Separate.		Loans from Govt.	Total.
	Sq.Miles.	No.	No.	£	£	£	£	£	£
Cities ...	77½	138,857	25,516	10,509,330	101.593	51.803	1,179.896	201.788	824.868
Towns ...	276½	88.249	17,941	3,471.407	38,921	25.348	112,144	128,727	162.216
Shires ...	669,901	306,212	68,211	29,197.808	160,582	15.082	254.363	113.550	158,749
Total ...	670.255	533,318	111,668	43,178.545	301,096	92.233	1,546,403	444,065	1.145,833

4. **Receipts and Expenditure of Local Authorities, 1906.**—The following table gives particulars of the receipts and expenditure of cities, towns, and shires for the year ended the 31st December, 1906:—

QUEENSLAND.—RECEIPTS AND EXPENDITURE OF CITIES, TOWNS, AND SHIRES, 1906.

Local Authority.	Receipts.				Expenditure.				
	From Government.	From Rates.	From other Sources.	Total.	On Public Works.	Loan Redemption.	Office Expenses and Salaries.	Other Expenses.	Total.
	£	£	£	£	£	£	£	£	£
Cities ...	339	150.027	51,414	201,780	107.644	14,468	15,151	60,059	197,322
Towns ...	4.360	67,141	11,157	82,658	53.505	13,675	8.855	12.482	88.517
Shires ...	6.915	170,617	20,818	198,351	131,571	23,211	33.359	27,580	215.721
Total ...	11.614	387,785	83,389	.482.789	292,720	51,354	57,365	100,121	501.560

5. **Receipts and Expenditure of Cities, Towns, and Shires, 1903 to 1906.**—The following table shews the receipts and expenditure of cities and towns and of shires, as well as the total receipts and expenditure of all municipalities, for each year since the Local Authorities Act 1902 came into operation:—

QUEENSLAND.—REVENUE AND EXPENDITURE OF CITIES, TOWNS, AND SHIRES, 1903 TO 1906.

Year.	Municipality.	Receipts.				Expenditure.				
		From Government.	From Rates.	From Other Sources.	Total.	On Public Works.	Loan Redemption.	Office Expenses and Salaries.	Other Expenses.	Total.
		£	£	£	£	£	£	£	£	£
1903...	Cities and Towns	29,971	191,975	60.582	282.528	184,397	30,863	24.120	65,065	304,445
	Shires	30.042	118.127	16.559	194,728	132,135	18.470	32.861	24.304	207,770
	Total ...	60,013	340,102	77.141	477,256	316.532	49,333	56,981	89,369	512,215
1904...	Cities and Towns	11,766	216.133	65,304	293.203	164,099	31.897	27,173	69,021	292.190
	Shires	2,131	160,759	18,204	181,184	109,393	22,349	31,838	21.760	185,340
	Total ...	13.897	376.892	83,598	474,387	273.492	54.246	59,011	90.781	477,530
1905...	Cities and Towns	5,071	216.283	91.156	312,510	175,279	62.988	24,906	58.473	321.646
	Shires	10.028	161.198	19.612	190,838	107.984	18,778	32,753	20,992	180,457
	Total ...	15,099	377,481	110,768	503,348	283,213	81,766	57,659	79,465	502.103
1906..	Cities and Towns	4,699	217.168	62.571	284.438	161,149	28,143	24.006	72,541	285.839
	Shires	6,915	170,617	20,818	198.350	131.571	23,211	33,359	27,580	215,721
	Total ...	11,614	387,785	83,389	482,788	292,720	51,354	57,365	100.121	501,560

6. **Area, Population, Number of Dwellings, Assets and Liabilities of Cities, Towns and Shires, 1903 to 1906.**—The following table gives particulars as to the area, population, number of inhabited tenements, assets and liabilities, of cities and towns and of shires, for each year since the Act of 1902 came into operation:—

QUEENSLAND.—AREA, POPULATION, NUMBER OF INHABITED DWELLINGS, ASSETS AND LIABILITIES OF CITIES AND TOWNS AND OF SHIRES, 1903 TO 1906.

Year.	Municipality.	Area.	Population.	Number of Inhabited Dwellings.	Capital Value.	Assets.	Liabilities.		
							Government Loans.	Other.	Total.
		Square Miles.	No.	No.	£	£	£	£	£
1903	Cities and Towns	361	207,334	39,077	14,546,208	1,261,850	338,192	632,394	970,586
	Shires	667,891	290,009	66,224	29,603,766	280,607	152,862	36,058	188,920
	Total ...	668,252	497,343	105,301	44,149,974	1,542,457	491,054	668,452	1,159,506
1904	Cities and Towns	354	222,397	41,931	14,865,198	1,252,764	309,713	634,674	944,387
	Shires	667,898	271,529	63,687	28,786,043	239,843	108,753	32,728	141,481
	Total ...	668,252	493,926	105,618	43,651,241	1,492,607	418,466	667,352	1,085,868
1905	Cities and Towns	354	224,672	42,857	14,409,576	1,272,911	302,838	678,835	981,673
	Shires	667,898	290,576	64,844	27,948,597	250,052	134,899	33,793	168,692
	Total ...	668,252	515,248	107,701	42,858,173	1,522,963	437,737	713,628	1,150,365
1906	Cities and Towns	354	227,106	43,457	13,980,737	1,292,040	330,515	656,569	987,084
	Shires	669,901	306,212	68,211	29,197,808	254,363	113,550	45,199	158,749
	Total ...	670,255	533,318	111,668	43,178,545	1,546,403	444,065	701,768	1,145,833

7. **Brisbane Water Supply.**—The water supply of the city of Brisbane and suburbs is administered by a Board of five members, of whom the Secretary for Public Works for the time being is an *ex officio* member. The supply is derived from the upper reaches of the Brisbane River, and from two storage reservoirs, known respectively as the Enoggera and the Gold Creek reservoirs. For some years after the constitution of Brisbane as a municipality in 1859, the city supply was drawn from a chain of water-holes and sold to the residents. This scheme was later superseded by another under which water-carriers were licensed. Later, again, the Board of Water Supply was constituted, and the construction of the Enoggera reservoir by the damming of Ithaca Creek was commenced in 1864 and completed in August, 1866. This was followed in 1885 by the construction of the Gold Creek reservoir, which provided an improved service and better water. In April, 1892, the works at Mount Crosby, at the head of the Brisbane River, were completed. At these works the water is pumped to a reservoir 455 feet above Brisbane high-water mark, whence it is delivered to the city by gravitation. The water can also be diverted to Gold Creek, where the reservoir is kept filled, while a reservoir on Highgate Hill is also connected and fitted with aerating apparatus.

(i.) *The Brisbane River Supply.* This is the principal source of supply, about 60 per cent. of the water used being taken from it. The catchment area above the pumping station is about 4000 square miles. The Mount Crosby service reservoir, into which the water is pumped from the river, is built in cement concrete, and is 267 feet long, 100 feet wide, and 15 feet deep from high-water line, which is 455 feet above high-water mark at Brisbane. The capacity is nearly 2,500,000 gallons. The outlet pipe is thirty-four inches in diameter, and leads through the valve-house to the gravitation main to Brisbane, 17¾ miles long and twenty-four inches in diameter. At Kenmore, eleven miles from Mount Crosby, a junction is effected between this 24-inch main and the 16-inch main from Gold Creek.

(ii.) *The Enoggera Reservoir.* The Enoggera are the oldest works now in use, and are distant from Brisbane about eight miles by road. The catchment area is nearly thirteen square miles in extent, and the reservoir, which is formed by an earthen dam, holds 1,000,000,000 gallons, of which 600,000,000 are available by gravitation. The greatest length of the reservoir is 2600 yards, and its greatest breadth 700 yards. There are three lines of pipes from the reservoir to Brisbane—sixteen inches, twelve inches, and eight inches in diameter. The total carrying capacity of these pipes is about 3,000,000 gallons a day.

(iii.) *The Gold Creek Reservoir.* This reservoir is situated in the upper waters of Gold Creek, a branch of Moggil Creek, distant from Brisbane by road about thirteen miles. The supply is drawn from a catchment area adjoining that of Enoggera, and comprising an area of nearly four square miles. The total capacity is about 406,000,000 gallons, of which 400,000,000 gallons are available. The diameter of the service main is sixteen inches, the distance from the valve house to Brisbane being 12½ miles. The greatest length of the reservoir is 1650 yards, and its greatest breadth 682 yards.

(iv.) *Highgate Hill Service Reservoir.* This reservoir was constructed in 1889 to supply parts of South Brisbane. Its capacity is 2,176,000 gallons. To fill this reservoir, and in order to ensure a good water supply to the south side generally, an inverted syphon, sixteen inches in diameter, was laid under the Brisbane River between Toowong and West End in 1889. The syphon is 800 feet long, and is connected both with the Mount Crosby and Gold Creek mains.

(v.) *Brisbane Waterworks: Cost, Revenue, Expenditure, and Interest, 1901 to 1906.* The subjoined table gives particulars as to the cost, the revenue and expenditure, and the amount of interest and loan redemption during each year from 1901 to 1906, inclusive:—

BRISBANE WATERWORKS.—COST, REVENUE, EXPENDITURE, INTEREST AND REDEMPTION OF LOANS, 1901 TO 1906.

Year.	Capital Cost.	Revenue from Rates and Sales of Water.	Working Expenses.	New Work Construction.	Interest and Redemption of Loans.
	£	£	£	£	£
1901	694,973	60,120	17,462	7,535	42,426
1902	711,178	60,917	19,305	18,168	26,716
1903	727,311	62,485	18,917	17,429	26,716
1904	740,618	63,338	23,888	13,244	26,716
1905	751,477	65,584	25,606	10,860	26,716
1906	*774,921	67,280	19,255	23,444	26,716

* The book value of the works at the end of 1906 was £535,462, the difference being amounts written off for depreciation, losses through floods, or the removal of smaller mains.

(vi.) *Brisbane Waterworks: Length of Mains, Tenements and Population Served, and Water Consumption, 1901 to 1906.* The following table shews the length of mains, the number of tenements connected, the population supplied, the total quantity of water supplied, the average daily supply, and the average daily supply per head of population supplied during each year from 1901 to 1906, inclusive:—

BRISBANE WATERWORKS.—LENGTH OF MAINS, NUMBER OF TENEMENTS AND POPULATION SERVED, AND QUANTITY OF WATER SUPPLIED, 1901 TO 1906.

Year.	Length of Reticulation Mains.	Estimated Number of Tenements Connected.	Estimated Population Supplied.	Quantity Supplied.	Average Daily Supply.	Average Daily Supply per Head of Estimat'd Population.
	Miles.	No.	No.	Gallons.	Gallons.	Gallons.
1901 ...	198	15,652	78,260	1,536,260,000	4,208,931	55
1902 ...	216¾	17,346	86,730	1,499,674,000	4,108,696	47
1903 ...	229¼	17,435	87,175	1,413,722,000	3,873,211	44
1904 ...	240¼	17,814	89,070	1,686,845,000	4,621,493	52
1905 ...	250½	18,855	94,275	1,749,820,000	4,794,028	51
1906 ...	264	19,223	96,115	1,630,899,000	4,468,216	46½

The total length of the trunk mains is 52½ miles.

Graphs relating to the water supply of Brisbane may be found on page 859 hereinafter. Particulars relating to the sewerage system of Brisbane are not available.

8. **Country Towns Water Supply, 1906.**—In addition to the city of Brisbane there were at the end of the year 1906 twenty-two towns in Queensland provided with water supply systems, constructed by municipalities chiefly from Government loans. The subjoined statement gives particulars of all the water supply systems—exclusive of Brisbane—for the year 1906:—

QUEENSLAND.—PARTICULARS OF COUNTRY WATER SUPPLY SYSTEMS, 1906.

		£			£
Cost of construction		595,004	Expenditure	Office and salaries	8,785
Receipts	Government loans	5,703		Construction	17,145
	Rates and sales of water	68,511		Maintenance	22,825
	Other	2,960		Interest & redemption	24,422
	Total	77,174		Total	73,177
Assets		521,628	Liabilities		430,845

9. **Fire Brigades.**—In the year 1906 there were eighteen fire brigades organised in various towns in Queensland. The revenue of these brigades is derived chiefly from grants from the Government, from municipalities, and from the insurance companies, generally in equal proportions. The following table gives particulars for the year 1906 for the seventeen fire brigades from which returns were received:—

QUEENSLAND.—FIRE BRIGADES, 1906.

Receipts.	Amount.	Expenditure.	Amount.
	£		£
From Government	3,807	Salaries and wages	6,146
„ Municipalities	3,873	Building, repairs, etc.	1,168
„ Insurance companies	3,783	Plant, stores, clothing, etc.	1,616
„ Other sources	570	Other	2,725
Total	12,033	Total	11,655

§ 5. South Australia.

1. **Development of Local Government Systems.**—In the latter part of 1839 the first municipal law was passed in South Australia, which was thus the birthplace of municipal government in the Commonwealth. On the 31st October, 1840, the principles of self-government were practically adopted in Adelaide by the election of a mayor and council, consisting of nineteen members, and the system has since been extended throughout the settled parts of the State by the formation of district councils and municipal corporations, which are the two types of local authorities now in existence.

2. **District Councils.**—The first District Councils Act was passed in 1858, was amended in 1862, and was further amended and consolidated by the District Councils Act of 1876, which provided for the continuation of existing districts and for the establishment of new ones by proclamation on the petition of the ratepayers. The revenue of the councils consisted of rents, profits, and income from lands vested in the council or over which the council had the control and management; fines and penalties enforced under

the Act; fees for licenses; and general and special rates and loans. Provisions were made for the election of councillors, their number, qualifications, and retirement; for the election of auditors; the meetings, powers and functions of councils; the appointment of constables; revenue and expenditure; assessment and rates; and for making by-laws for various purposes. The Act of 1876 was amended from time to time, and was finally amended and consolidated by the Act which is now in force, namely the District Councils Act 1887, which has in turn been amended in the years 1890, 1893, 1897, and 1904.

(i.) *The District Councils Act 1887* provides for the continuation and amalgamation of existing districts and for the constitution as a new district of any part of the State containing ratable property capable of yielding upon a rate not exceeding one shilling in the pound a sum of £200. The Governor is authorised to alter the area or boundaries of any district by annexation or by subdivision. New districts are constituted upon petition to the Governor; every petition must be signed by fifty inhabitants of the part sought to be constituted, and if the proposed district comprises portion of a previously existing district, by a majority of the ratepayers of such portion.

(*a*) *Qualification of Councillors.* Every male ratepayer, if of full age, is qualified to be a councillor, unless he is a minister of religion, a stipendiary magistrate, an uncertificated insolvent, or is the treasurer or a paid official of the district council, or is interested in any contract, except for advertisements and printing, with the district council. The chairman is elected by the councillors from their own number.

(*b*) *Qualification of Electors.* Every person of either sex, if of the age of twenty-one years, whose name appears as a ratepayer in the assessment book is entitled to vote at the elections of councillors and auditors. In case of a joint tenancy or a tenancy in common, only one person is entitled to a vote for every £75 or part thereof at which the property is assessed.

(ii.) *Assessments and Rates.* Assessments are generally made at four-fifths of the gross annual rent at which the property would let for a term of seven years, or at 5 per cent. on the capital value, but in case of land within a township, not less than twenty acres in area, and not built on, used, or divided by roads, assessment is made at the rate of 2½ per cent. on the value of the fee-simple. All other township land unbuilt on is assessed at 5 per cent. on the fee-simple value, and for lands held under mining lease from the Crown, the assessment may not exceed the annual rental. *General Rates* may not be more than one shilling and sixpence nor less than threepence in the pound on the assessed value. *Special Rates* for the execution of permanent works may also be declared, provided that the general and special rates together do not exceed two shillings and sixpence in the pound. No special rate may be declared without the consent of the ratepayers to be obtained at a meeting called for the purpose, and any six ratepayers may demand a poll to be taken on the subject. The ratepayers of any portion of a district may memorialise the council for specific works for the benefit of such portion of the district, and if the council decide to comply with the memorial, a *separate rate* may be levied in respect of property in the portion defined. Lighting rates may also be declared, but must not exceed fourpence in the pound.

(iii.) *Loans.* Any council may, for the execution of any works for which a special or separate rate has been declared, borrow on the security of such rate up to ten times the amount which at the time of borrowing would result from a rate of one shilling in the pound, but if demand be made by any twenty ratepayers, the question whether or not the proposed loan be incurred must be submitted to a poll of the ratepayers. The interest payable on any such loan must not exceed 6 per cent. By an amending Act passed in the year 1904, additional borrowing powers were conferred on the councils for the purpose of carrying out permanent works, subject to the conditions that the total amount borrowed must not at any time exceed three times the amount which would result from a rate of one shilling in the pound, and that the principal sum and interest must be repaid by means of a sinking fund within forty-two years.

(iv.) *Revenue and Expenditure.* The revenue of the councils consists of rents, profits and income from property vested in the council or over which the council has control; the proceeds from the sale of such property; fines and penalties imposed under the Act; fees for licenses; rates; and main road subsidies. Under the District Councils and Corporation Subsidy Act 1890 provision is made for grants out of the general revenue to district councils and corporations in lieu of fees received under the Auctioneers Act 1862 and the Licensed Victuallers Act 1880. The amount of such grant is a sum equal to five shillings in the pound on the amount collected from general rates not exceeding one shilling in the pound declared during any one year. Revenue may be expended on carrying out any authorised works; in payment of salaries and professional fees; in subscriptions to charities; in payment of councillors' travelling expenses; in promoting bills before Parliament, and generally in carrying out the purposes of the Act.

(v.) *Powers and Duties of Councils.* A council may carry out certain permanent works which are defined in the Act, and which comprise the following:—The construction of new streets and roads, sewers, and drains; the construction or purchase of waterworks, district offices, pounds, abattoirs, markets, baths, hospitals, and other charitable institutions; the providing of libraries, museums, and places of public recreation; and the construction of tramways and machinery for the treatment of refuse. The councils are invested with wide powers to make by-laws for the more effective exercise and discharge of their powers, duties, and liabilities, particularly in respect of the following matters:—The compulsory purchase of land; manufacturing districts; the public health; the sale of food and drugs; the management of unoccupied waste lands of the Crown; drainage; piers, jetties, and wharves; weights and measures; vermin destruction; game and fisheries; streets, roads, and public places; fire brigades; impounding; and for fixing penalties for breaches of such by-laws. Upon the district councils also is imposed the duty of administering the Health Acts, the Sale of Food and Drugs Acts, the Game and Fisheries Acts, the Vermin Acts, the Bush Fires Act, the Impounding Act, the Weights and Measures Act, and the Slaughter House Act.

3. **Municipalities** were first established under the Municipal Corporations Act of 1861, which, after providing for the extensions of the powers and duties of the Corporation of the City of Adelaide, authorised the Governor, on petition of a majority of not less than two-thirds of the property-owners, to incorporate any town, district, or place within the province, a municipality. This Act and its amendments were consolidated in the Municipal Corporations Act of 1880, which was amended from time to time until the year 1890, when it was repealed and its provisions consolidated by the existing Act, the Municipal Corporations Act of 1890, which was in turn amended in 1903.

(i.) *The Municipal Corporations Act 1890.* After making provision for continuing existing corporations and by-laws the Act authorises the Governor to constitute new municipalities, or to alter the boundaries of existing ones, on petition of not less than two-fifths of the ratepayers or owners of ratable property within the land proposed to be incorporated, separated, or added; and also to rearrange, increase, or diminish the number of wards of a municipality on petition of not less than one-fifth of the ratepayers. Each council consists of a mayor, and of two councillors for each ward, and the provisions as to their qualifications are substantially the same as in the case of district councils referred to above. All persons of full age, if British subjects and not in receipt of public relief or alms, who are either owners or occupiers of any ratable property within a municipality are entitled to vote at the election of the mayor and councillors. Provision is made for the nomination and election of the mayor, councillors, and auditors, and for regulating the meetings of the councils.

(ii.) *Municipal Functions of Councils.* All public streets and roads are vested in the council of the municipality in which they lie, but no street can be declared a public street after the passing of the Act unless it is at least forty feet wide. Full powers are given as to opening, closing, or fencing public streets, and for supervising the formation and repair of private streets and lanes. Councils are further authorised to execute works for, or to contract for the lighting, sewerage, and drainage of municipalities; to take all measures requisite for the public health; to establish public baths, fountains, and parks; to grant licenses for slaughter-houses, hide and skin markets, for the depasturing of cattle, and for the removal of sand and gravel; to control the erection or pulling down and the maintenance of buildings and hoardings; to organise fire brigades, and to order the removal of inflammatory buildings.

(iii.) *Assessments and Rates.* Owners and occupiers of ratable property in municipalities are assessed each year on the same basis as stated above in respect to ratable property within districts under the government of district councils. In addition to the rate authorised by the Public Health Act *a general rate*, not exceeding one shilling in the pound, may be declared; rates for lighting and for the improvement of parks and reserves may also be levied, the former being limited to fourpence and the latter to threepence in the pound. The council may also declare a rate for defraying the expense of watering streets, to be apportioned among the persons liable for the rates in respect of properties fronting such streets. *Special and separate rates* may also be levied in the same manner as by district councils, but, in the case of municipalities, the general and special rates together must not exceed two shillings in the pound.

(iv.) *Borrowing powers* of municipal corporations are substantially the same as those of district councils, and similar additional powers were given to municipalities as to districts by the Municipal Corporations Amendment Act 1903.

(v.) *Revenue, Expenditure, and Miscellaneous.* Other provisions as to the revenue and expenditure of municipalities, and their powers as regards permanent works, are the same as those in force under the District Councils Acts, referred to above, while very wide powers are given to municipal councils in respect of a variety of matters and things to provide by means of by-laws for the general good government of the municipalities.

4. **Finances of District Councils and Corporations, 1901 to 1906.**—The subjoined tables shew the amounts of assessment and the revenue and expenditure of district councils and of corporations for each financial year from 1901 to 1906, inclusive; the figures given are exclusive of the Main Roads Funds, particulars as to which may be found in the section of this book on "Roads and Bridges."

SOUTH AUSTRALIA.—ASSESSMENT, REVENUE, AND EXPENDITURE OF DISTRICT COUNCILS, 1901 TO 1906 (EXCLUSIVE OF MAIN ROADS FUNDS).

Year.*	Amount of Assessment.	Revenue.				Expenditure.	
		From Rates.	From Subsidies.	Other Sources.	Total.	On Public Works.	Total.
	£	£	£	£	£	£	£
1901	1,412,507	63,321	15,225	51,919	130,465	65,406	128,499
1902	1,433,036	63,193	15,735	38,198	117,126	66,355	121,210
1903	1,452,413	64,207	15,358	40,713	120,278	64,642	122,936
1904	1,488,716	70,975	14,252	39,766	124,993	70,201	123,778
1905	1,503,230	71,608	15,490	46,603	133,696	69,769	131,028
1906	1,604,979	75,253	16,845	39,987	132,084	72,067	128,605

ASSESSMENT, REVENUE, AND EXPENDITURE OF CORPORATIONS, 1901 TO 1906 (EXCLUSIVE OF MAIN ROADS FUNDS).

1901	1,177,850	87,289	9,733	49,342	146,364	55,533	146,091
1902	1,195,991	87,961	9,113	60,531	157,605	58,651	157,523
1903	1,208,825	85,702	10,470	57,509	153,681	55,544	152,475
1904†	1,222,522	96,545	14,766	45,534	156,845	61,004	156,722
1905	1,236,578	98,632	15,127	47,267	161,026	60,720	159,863
1906	1,253,566	99,160	14,713	52,225	166,098	63,422	162,078

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* Up to and including the year 1903, the financial year for Corporations ended on the 31st December, but after that date ends on the 30th November. The financial year for district councils ends on the 30th June. † For eleven months ended the 30th November, 1904.

5. **Adelaide Water Supply System.**—The water supply system of Adelaide is under the control of the Public Works Department. The supply is obtained partly from the catchment areas of the rivers Onkaparinga, Torrens, and Sixth Creek, and partly from springs and pumping stations. There are three storage reservoirs, situated at Happy Valley, Hope Valley, and at Thorndon Park, having an aggregate capacity of 3,895,000,000 gallons, while the tanks used in connection with the springs and pumping stations have a further capacity of 4,824,000 gallons. The total capital cost up to the 30th June, 1906, was £1,675,313, the total amount paid by way of interest on loans being £1,406,881, the total expenditure on maintenance £620,409, and the total revenue £2,117,062. The area served at the same date was 76,532 acres.

The following table gives various particulars relating to the water supply of Adelaide for the years 1904 to 1906, inclusive:—

ADELAIDE WATER SUPPLY.—LENGTH OF MAINS, REVENUE, EXPENDITURE, AND CONSUMPTION OF WATER, 1904 TO 1906.

Year Ended 30th June.	Length of Mains.	Gross Revenue.	Working Expenses.	Net Revenue.	Percentage of Net Revenue on Capital Cost.	Total Consumption of Water.[1]
	Miles.	£	£	£	%	Million of Gals.
1904 ...	640	70,333	19,257	51,076	3.09	3,550
1905 ...	647	72,471	20,002	52,469	3.16	3,650
1906 ...	656½	72,976	22,298	50,678	3.02	3,550

[1] In the Adelaide Water District there are no governing meters. The quantities shewn above are as recorded by gaugings taken at the reservoirs, and include evaporation and absorption.

6. **Adelaide Sewerage System.**—In connection with the sewerage system of Adelaide, which is also under the control of the Public Works Department, 242½ miles of sewers had been laid in the city and suburbs up to the 30th June, 1906, the total number of premises connected being 24,020. The sewage is disposed of on a farm and filter-beds, the latter being used only during the winter months. The total cost of construction to the 30th June, 1906, was £622,034.

The following table gives particulars relating to the Adelaide sewerage system for the years 1904 to 1906, inclusive:—

ADELAIDE SEWERAGE SYSTEM—REVENUE AND EXPENDITURE, 1904 TO 1906.

Year Ended the 30th June.	Revenue.			Expenditure.			Net Revenue.	
	Rates and Interest.	Sewage Farm. Sales of Produce, etc.	Total.	Maintenance.	Sewage Farm Working Expenses.	Total.	Total.	Percentage on Capital Cost.
	£	£	£	£	£	£	£	%
1904 ...	30,923	6,594	37,517	5,466	5,962	11,428	26,089	4.12
1905 ...	31,682	6,817	38,499	5,679	5,393	11,072	27,427	4.41
1906 ...	32,530	7,006	39,536	5,921	5,901	11,822	27,714	4.45

7. **Water Supply in Country Towns.**—In South Australia there are a number of country water works under the control of the Public Works Department. These works are partly used for irrigation purposes, and the most important of them have already been referred to in the section of this book dealing with the subject of "Irrigation." (See p. 490 *ante.*) In 1906 there were twenty-five of these districts, the total cost of construction to the 30th June, 1906, being £2,247,990. On the same date the total amount

paid by way of interest on loans was £1,060,618, the total expenditure on maintenance being £257,669, and the total revenue £589,933.

The following table gives particulars relating to these water districts for the years 1904 to 1906, inclusive:—

SOUTH AUSTRALIA.—PARTICULARS OF WATER DISTRICTS, 1904 TO 1906.

Year ended the 30th June—	Number of Water Districts.	Total Area Supplied.	Capacity of Res'rvoirs, etc.	Length of Mains.	Gross Revenue.	Working Expenses.	Net Revenue.	Perc'ntage of Net Revenue on Capital Cost.
	No.	Acres.	M'llions of Gallons.	Miles.	£	£	£	%
1904 ...	25	2,617,520	3,469	1,280¼	44,007	22,499	21,508	0.99
1905 ...	25	2,615,731	3,466	1,194¼	36,381	12,350	24,031	1.11
1906 ...	25	2,614,280	3,470	1,391¾	44,620	19,872	24,748	1.10

§ 6. Western Australia.

1. **Types of Local Authorities.**—In this State there are three forms of local authorities, namely:—(i.) Municipalities, (ii.) Road Districts, and (iii.) Local Boards of Health. The first Municipalities Act was passed in 1871, but only a few districts were incorporated under it. In 1895 a more comprehensive measure, the Municipal Institutions Act, was passed, and after being amended from time to time was consolidated by the Municipal Institutions Acts 1902 and 1904. In 1906 the most recent enactment, the Municipal Corporations Act, was passed, repealing and consolidating previous enactments. The whole area of the State outside incorporated municipalities is divided into road districts, which are administered under the Roads Act 1902 and 1904. In municipalities the councils act as Health Boards for the purpose of administering the Public Health Act, while outside municipalities local Boards of Health may be formed. In 1904 another local government measure, the Water Boards Act, was passed, under which Boards may be appointed for the control of waterworks, and rates may be levied for the purpose, the maximum being fixed at two shillings in the pound of ratable value.

2. **Municipalities** are now regulated by the Municipal Corporations Act, which came into force on the 1st January, 1907. Provision is made for the continuation of existing municipalities, and the Governor is authorised to constitute new municipalities on petition signed by at least fifty property-holders of the district proposed to be incorporated; to unite adjoining municipalities on petition under their common seals; to sever any portion from a municipality on petition signed by a majority of the ratepayers, and to annex such portion to a contiguous municipality or road district.

(i.) *Municipal Councils* consist of a mayor and councillors, the number of which depends upon the population of the municipality; if the population is less than 1000 there are six councillors, if from 1000 to 5000 there are nine councillors, and if the population is over 5000 there are twelve councillors, or three for each ward. Any male ratepayer of the age of twenty-one years, if a natural-born or naturalised subject, is eligible for election as mayor or councillor, except ministers of religion, uncertificated bankrupts, prisoners, and certain other persons who may be disqualified on the ground of interest.

(ii.) *Qualification of Voters.* Every ratepayer, if of twenty-one years of age or over, is entitled to vote at the municipal elections. In the case of joint owners or occupiers, each owner or occupier, if not exceeding two in number, is deemed to be the owner or occupier of half the property; if more than two in number the owners or occupiers may appoint two of their number to be registered in respect of the property. Corporations and companies may also nominate two persons to be registered as voters.

(iii.) *Powers and Duties of Councils.* The councils have power to make by-laws with respect to the usual matters pertaining to municipalities, and are also invested with the control and management of all public places, streets, roads, bridges, sewers, and drains within the municipality. They may contract for the lighting of any part of the municipality for a period not exceeding three years, and may levy a lighting rate; they may construct dams or reservoirs for water supply, may establish fire brigades and baths, and may provide places of recreation, pounds, abattoirs, markets, and weighbridges.

(iv.) *Valuation of Ratable Property.* All land is ratable property except the following:—Property of the Crown used for public purposes or unoccupied; property used for religious or charitable purposes; public libraries, museums, etc.; cemeteries; any land declared by the Governor to be exempt from municipal rates. Generally the annual value of improved or occupied land is the average rent obtainable, less 20 per cent., but in no case may the annual value be less than 4 per cent. of the fee-simple value. The annual value of unimproved or unoccupied land is taken to be not less than 7½ per cent. on the capital value. No allotment of ratable land may be valued at an annual value of less than £2 10s.

(v.) *Rates.* General rates are levied annually, but may not exceed one shilling and sixpence in the pound on the annual value. Lighting rates and special rates for the repayment of debentures and interest may also be struck, but may not exceed the maximum rate allowed in the case of general rates.

(vi.) *Borrowing Powers.* The council of a municipality may borrow money on the credit of the municipality for permanent works, or for the purpose of liquidating the principal moneys owing on account of any previous loan. Permanent works may be the construction or alteration of any street, footway, road, bridge, culvert, wharf, or jetty; the construction of sewers and drains, and works connected with sewerage and drainage; the construction or purchase of waterworks, tramways, municipal offices, pounds, abattoirs, markets, and baths; the improvement of endowment lands; providing places of public recreation; the construction of a general warehouse, or a theatre, or of refuse destructors; and the purchase of quarries or land. The amount borrowed at any time may not exceed ten times the average ordinary income of the municipality for the two years last preceding, and the amount borrowed to liquidate any loan must not exceed the balance of principal owing. A municipality may also overdraw on the amount of its current account, but the overdraft must not at any time exceed one-third of the ordinary revenue for the preceding year.

(vii.) *Government Subsidies.* Grants are made annually to municipalities by way of subsidies on the amounts of rates collected. To entitle any council to participate in the allocation of the annual Parliamentary vote the council must have levied a minimum general rate of one shilling in the pound, and must have collected not less than £300 from such rate. Newly-constituted municipalities are, during the first year of existence, dealt with apart from the provisions of the general scheme, and are allowed a subsidy of £2 for every £1 of general rate collected; in subsequent years they participate according to the general provisions. The following table shews the basis on which the municipalities are classified:—

WESTERN AUSTRALIA.—CLASSIFICATION OF MUNICIPALITIES.

Income from General Rates	From £20,000 to £30,000.	From £10,000 to £20,000.	From £5000 to £10,000.	From £500 to £5000.	Under £500.
Class	1st	2nd	3rd	4th	5th

No subsidy is paid on income from general rates exceeding £3000.

3. **Area, Population, etc., of Municipalities.**—Returns regarding the area, population, and valuation of municipalities are defective. They are shewn in the table hereunder:—

WESTERN AUSTRALIA.—NUMBER, AREA, POPULATION, NUMBER OF DWELLINGS, AND VALUATION OF MUNICIPALITIES, 1901 TO 1906.

Year ended the 31st October.	Number of Municipalities.	Area.	Population.	Dwellings.			Unimproved Capital Value of Freehold Land.	Amount Payable in respect of Rates.
				Occupied.	Unoccupied.	Total.		
	No.	Acres.	No.	No.	No.	No.	£	£
1901*...	42	71,721	96,807	20,989	967	21,956	...	...
1902 ...	44	68,867	96,807	20,989	967	21,956	...	...
1903 ...	44	73,338	115,350	20,989	967	21,956	...	...
1904 ...	43	77,331	†115,182	‡20,961	‡960	‡21,921	...	...
1905 ...	43	75,415	†115,182	‡20,961	‡960	‡21,921	‡8,280,698	132,453
1906 ...	45	81,519	125,474	‖	‖	‖	‡8,280,698	142,229

* Census figures, 1901. † Returns for thirty-eight municipalities only. ‡ Returns for forty-two municipalities only. ‖ Not available.

4. **Revenue and Expenditure of Municipalities, 1901 to 1906.**—The following table gives particulars as to the revenue and expenditure of municipalities during each year from 1901 to 1906, inclusive:—

WESTERN AUSTRALIA.—REVENUE AND EXPENDITURE OF MUNICIPALITIES, 1901 TO 1906.

Year ended the 31st October	Revenue.				Expenditure.			
	From Rates.	From Govt. Grants.	From other Sources.	Total.	Works and Improvements.	Disbursements in respect of Loans.	Other Expenses.	Total.
	£	£	£	£	£	£	£	£
1901 ...	78,021	66,860	82,228	227,109	111,241	23,809	79,365	214,415
1902 ...	94,894	81,436	113,591	289,921	125,721	33,936	123,615	283,272
1903 ...	104,760	80,938	116,653	302,351	142,347	33,294	137,228	312,869
1904 ...	119,110	90,868	213,785	423,763	187,747	38,227	168,524	394,498
1905 ...	130,575	85,798	167,793	384,166	183,226	53,746	174,716	411,688
1906 ...	146,206	95,997	210,226	452,429	165,421	50,739	200,844	417,004

5. **Assets and Liabilities of Municipalities, 1901 to 1906.**—The following table gives particulars respecting the assets and liabilities of municipalities at the end of each financial year from 1901 to 1906, inclusive:—

WESTERN AUSTRALIA.—ASSETS AND LIABILITIES OF MUNICIPALITIES, 1901 TO 1906.

Year ended the 31st October	Assets.					Liabilities.		
	Balance in Hand.*	Value of Property owned by Municipalities.	Accrued Sinking Funds for Redemption of Loans.	Other Assets.	Total.	Outstanding Debts and Bonds.	Other Liabilities.	Total.
	£	£	£	£	£	£	£	£
1901† ...	37,259	214,984	42,311	13.432	307,986	321,000	19,762	340,762
1902‡ ...	49,557	294,800	62,239	20,420	427,016	413,050	29,700	442,750
1903 ...	41,375	332,492	64,936	34.141	472,943	437,300	41,200	478,500
1904 ...	72,894	354,798	81,514	36.718	545,924	589,800	32,304	622,104
1905 ...	43,209	473,320	94,892	36,086	647,507	623,414	28,031	651,445
1906 ...	78,579	537,407	110.165	46,495	772,646	729,614	29,333	758,947

* Including bank balance, cash in hand, and fixed deposit. † Incomplete.
‡ Exclusive of the municipality of Mount Morgans.

6. **Road Districts.**—The whole area of the State, outside incorporated municipalities, is divided into districts, the executive powers being vested in elective boards. These districts were originally formed solely for the purpose of controlling roads and bridges, but their powers and duties have been extended, so that at the present time they correspond closely to the shires of the other States of the Commonwealth. The enactments at present governing the administration of the Road Boards are the Roads Acts 1902 and 1904, the Parks and Reserves Act, the Cattle Trespassing Act, the Width of Tires Act, the Cart and Carriage Licenses Act, and the Dog Act. The general powers and duties of the Boards as regards roads and bridges are described in the section of this book entitled "Roads and Bridges." In addition to these powers and duties the Boards have power to do everything necessary for the proper management of the property under their control, and may also construct and maintain tanks, wells, and dams, and bore for water for the purpose of supplying water along any road in the district. Subject to the provisions of the Roads Acts, the Board has also the control and management of any such public reserves, parks, commons, wells, dams, reservoirs, buildings, machines, etc., as the Governor may direct. The Board has also extensive powers for making, altering, and repealing by-laws.

7. **Boards of Health** may be established under the Public Health Act 1886, either within or outside of municipal boundaries. In the former case the Act is administered by the municipal councils, while in the latter case special Boards are elected by the ratepayers. The revenue of these Boards consists chiefly of moneys received from health rates and sanitary fees, and the largest item of expenditure is directly connected with the sanitary service. The following table shews particulars of the receipts and expenditure of the various Boards—both municipal and extra-municipal—during each year from 1901 to 1906, inclusive:—

WESTERN AUSTRALIA.—RECEIPTS AND EXPENDITURE OF LOCAL HEALTH BOARDS, 1901 TO 1906.

Year ended the 31st October.	Revenue.			Expenditure.		
	From Public Health Rate.	From other Sources.	Total.	On Sanitary Services.	Other Expenses.	Total.
	£	£	£	£	£	£
1901	15,230	17,477	32,707	18,787	12,992	31,779
1902	17,639	12,591	40,230	19,248	20,114	39,362
1903	21,884	22,610	44,494	22,872	21,184	44,056
1904	25,777	25,904	51,681	28,299	23,321	51,620
1905	26,003	30,864	56,867	30,724	28,061	58,785
1906	28,242	40,943	69,185	40,518	28,038	68,556

On the 31st October, 1906, there were forty-five Local Boards of Health within municipalities and fifty-five extra-municipal Boards.

8. **The Perth Metropolitan Waterworks.**—These works were first opened by a private company in October, 1890. Under the provisions of the Metropolitan Waterworks Act 1896, however, the works were purchased by the Government at a cost of £220,000. and were placed under the control of a Board, which was in the year 1904 superseded by the Minister for Works. The original Act was subsequently amended in 1898, 1902, and 1905. The supply of water is derived from three sources—(i.) the Victoria reservoir, (ii.) the Mundaring reservoir, and (iii.) from six artesian bores.

(i.) *The Victoria Reservoir.* This is the main source of supply. The reservoir has a capacity of 212,000,000 gallons, and has a catchment area of 10,000 acres on the Darling Ranges. The water gravitates from the Victoria reservoir to Perth through two mains which are respectively 21 inches and 12 inches in diameter, and 15½ and 17 miles in length. There are two service reservoirs—one of 2,413,000 gallons, and the other of 600,000 gallons capacity. The quantity of water drawn from this reservoir during the year ended the 30th June, 1907, was about 506,000,000 gallons.

(ii.) *The Mundaring Reservoir.* This reservoir is used as an emergency supply. It has a capacity of 4,650,000,000 gallons, but is only connected by one eight-inch main. During the last financial year about 12½ million gallons were drawn. This reservoir has a catchment area of 569 square miles, and was constructed in connection with the goldfields water supply. (See p. 484 hereinbefore).

(iii.) *Artesian Bores.* There are in all six artesian bores, the flow from which augments the main supply from the Victoria reservoir. The total flow is about 360,000,000 gallons during the season, which lasts approximately for six months.

(iv.) *Financial Operations of Board, 1901 to 1907.* The following table gives particulars of the financial operations of the Metropolitan Waterworks Board for each year ending the 30th June, from 1901 to 1907, inclusive:—

PERTH METROPOLITAN WATERWORKS BOARD.—PARTICULARS OF FINANCIAL OPERATIONS, 1901 TO 1907.

Year ended the 30th June.	Capital Cost of Works	Depreciation.	Net Capital Cost.	Gross Revenue.	Cost of Maintenance and Management.	Interest Earned by Net Revenue on Net Capital Cost.	Percentage of Expenses[*] on Gross Revenue.
	£	£	£	£	£	Per cent.	Per cent.
1901 ...	386,414	...	386,414	27,249	8,021	4.9	29.4
1902 ...	395,764	...	395,764	32,676	13,059	5.2	36.9
1903 ...	408,681	...	408,681	34,164	18,536	3.8	54.2
1904 ...	413,764	...	413,764	36,517	14,674	5.3	40.2
1905 ...	418,479	...	418,479	42,177	14,561	6.6	35.0
1906 ...	440,125	6,165	433,960	43,571	12,989	7.0	29.8
1907 ...	486,857	15,915	470,942	45,848	14,923	6.6	32.5

(v.) *Perth Water Supply.—Consumption of Water, 1901 to 1907.* The following table shews the total annual supply, the average daily supply, and the average daily supply per house and per head of population during each financial year from 1900-1 to 1906-7, inclusive:—

PERTH METROPOLITAN WATERWORKS BOARD.—CONSUMPTION OF WATER, 1901 TO 1907.

Year ended the 30th June.	Total Annual Supply.[*]			Average Daily Supply.[*]	Number of Houses Supplied.	Estimated Population Supplied.	Average Daily Supply.	
	From Reservoir.	From Bores.	Total.				Per House.	Per Head of Population.
	000 Gals.	000 Gals.	000 Gals.	000 Gals.	No.	No.	Gals.	Gals.
1901 ...	380,003	161,589	541,592	1,484	6,182	32,000	240	45.2
1902 ...	334,752	168,439	503,191	1,378	7,043	35,000	195	39.3
1903 ...	203,517	366,504	570,021	1,561	8,108	38,350	192	40.7
1904 ...	436,657	264,566	701,223	1,921	9,104	41,000	211	46.8
1905 ...	481,528	274,327	755,855	2,071	10,105	45,000	204	46.1
1906 ...	552,373	288,812	841,185	2,305	10,882	48,000	212	48.0
1907 ...	506,751	359,797	866,548	2,375	12,164	52,000	195	45.6

[*] In thousands of gallons.

Graphs relating to the water supply of Perth will be found on page 859 hereinafter.

9. **Fremantle Harbour Trust.**— Under the provisions of an Act passed in 1902 a Harbour Trust was constituted for the general administration of Fremantle harbour, and since January, 1903, the Trust has had full control of all the affairs of the harbour. The works, which were commenced in 1892, were designed with the object of forming a safe and commodious harbour within the mouth of the Swan River, so as to admit vessels at all states of the tide, and thus enable cargo to be loaded and discharged at the quays and goods-sheds on the river banks. Two ocean moles have been thrown out from the north and south heads, the former being 3450 feet and the latter 2040 feet long. A channel, 450 feet wide and 30 feet deep at low water, has been blasted and dredged through the rock which formerly crossed the estuary to the river, and wharves and goods-sheds have been constructed along the reclaimed foreshore on the south side of the harbour. At the present time all the European mail boats, which make Fremantle the first and last port of call in Australia, are able to enter and leave the harbour in all weather and at all tides.

10. **Fire Brigades Boards.**—Fire brigades have been established in a number of the more important centres of population in the State. The brigades are under the control of local boards, and are in some cases municipal and in others volunteer. At the end of the year 1906 there were thirty-one such Boards in existence. The figures given below shew particulars of thirty of these Boards for the year 1906, one Board having failed to furnish returns:—

WESTERN AUSTRALIA.—FIRE BRIGADE BOARDS, 1906.

Number of firemen	498	Value of land, buildings, & plant	£31,703
Receipts	£14,045	Expenditure...	£12,699

§ 7. Tasmania.

1. **Development of Local Areas.**—In this State the city of Hobart was incorporated by special Act in the year 1852, but it was not until 1858, when the Rural Municipalities Act was passed, that a general scheme for the establishment of municipalities was extended throughout the State. This Act was amended from time to time without, however, altering its chief characteristics. In 1869 a Roads Act was passed, and after being amended at various times was consolidated in 1884. Under the provisions of these Acts parts of the State were placed under the control of Town Boards and Road Trusts. The general rate under the Municipalities Acts was limited to one shilling and sixpence in the pound of annual value, while special rates could be levied in rural districts, provided that the general and special rates together did not exceed one shilling and sixpence in the pound. Road rates might also be imposed in addition to municipal rates under the Roads Acts, with reference to which further particulars are given in the section of this book on "Roads and Bridges."

2. **Acts now in Force.**—In 1906 the whole of the Acts dealing with local authorities were amended and consolidated by the Local Government Act of that year. The whole State, with the exception of the urban municipalities of Hobart and Launceston, is divided into municipal districts, and every Rural Municipality, Town Board, Main Road District, Road District, Local Health District, Fruit District, Rabbit District, School District, and Public Recreation Ground District included in any municipality established by the Act is abolished. Each district is incorporated and is under the control of a warden and councillors, who, in addition to the specific duties and powers imposed and conferred by the Act have to administer the following Acts:—The Codlin Moth Act 1888, the Rabbits Destruction Act 1889, the Public Health Act 1903, the Education Act 1885, and the Roads Act 1884. The Governor is authorised to unite, subdivide, or abolish, municipalities or wards on petition, and may do so without petition if in any municipality there is at any time no council or not sufficient councillors to form a quorum.

(i.) *Formation of Councils.* In the case of municipalities not divided into wards the council is to consist of the number of members, being a multiple of three, assigned to it by the Governor, while the councils of municipalities which are subdivided consist of three councillors for each ward. Any resident elector is eligible to act as a councillor unless he is disqualified as being an interested person, a bankrupt or convict, or as undergoing a sentence of imprisonment, or as insane. The warden is elected by the councillors from their own body.

(ii.) *Qualification of Electors.* Both owners and occupiers of property within a municipality are allowed plurality of votes according to the following scale:—

Annual Value of Property ...	Under £30.	£30 to £80.	£80 to £160.	£160 to £240.	£240 to £360.	£360 and upwards.
Number of Votes	1	2	3	4	5	6

In the case of joint owners or occupiers the number of votes according to the above scale is equally divided as far as possible, and the vote or votes which cannot be so divided may be given by such one of the joint owners or occupier as may be appointed by the others. The provisions of the Acts relating to voting by post at parliamentary elections may be made applicable to any municipal election on the petition of the council to the Governor.

(iii.) *Local Districts and Committees.* Any municipal council may by special resolution define a local district to be assigned to a local committee, and any district proclaimed under the Public Recreation Grounds Act 1888 may also be defined as a local district. A local committee may exercise any of the powers and functions conferred upon councils as may be declared to be within its province by special resolution.

(iv.) *Revenue and Rates.* The ordinary revenue of a council, which consists principally of (*a*) rates (other than special rates), tolls, ferry dues, market dues, fees, and other charges authorised by the Act, and (*b*) grants from the central Government, is carried to a general account called the municipal fund. Rates are of two kinds, namely, (*a*) general, and (*b*) special. (*a*) *General Road Rates*, of not less than sixpence in the pound of the annual value of the whole of the ratable property in a municipality, must be levied at least once a year, but the total amount of all such rates levied in any one year must not exceed one shilling and threepence in the £. The proceeds of general road rates are carried to a separate account and are to be applied for the purposes of constructing and maintaining roads, streets, bridges, jetties, wharves, and tramways; at least three-fifths of all sums received in respect of property situate in a particular ward from the making of such a rate must be expended within such ward for the purposes mentioned. *General Health Rates* may be levied either prospectively or retrospectively in order to defray the expenses incurred in the execution of the Public Health Act 1903. (*b*) *Special Rates* may be made for the purpose of defraying the cost of constructing and maintaining works for sewerage or drainage, for the manufacture of gas, electricity, hydraulic or other power; watering or lighting roads; maintaining public recreation grounds; the destruction of rabbits; any of the purposes of the Public Health Acts; and of constructing and maintaining slaughter houses, abattoirs, or other works. A *Codlin Moth Tax* may be levied as prescribed by the Codlin Moth Act 1888, and when a council undertakes the removal of house refuse from premises the expense of such work is to be paid for by a *Special Cleansing Rate.* For defraying the expenses incurred in the execution of any work for the special benefit of a particular part of a municipality, the council may also levy a special rate called a *Separate Local Rate* upon all ratable property within such part, but the question as to whether any work is or is not for the special benefit of any particular part of the municipality must be referred to the Minister, who may direct, when such rate would exceed sixpence in the pound, that the question of levying the same be left to the decision of the electors of the defined part; whenever the expense to be incurred involves more than one yearly rate, the question must be referred to the electors.

(v.) *Ratable Property.* The council is not empowered to levy any rate or charge (except for water, prevention of fire, cleansing, drainage, or sewerage, or for light or power actually supplied, or for any service actually rendered) upon—Crown property; any property used solely for religious purposes; any portion of any premises used exclusively as a public library, museum, school of arts or mines, literary or scientific institution, or any cemetery; benevolent asylums or charitable institutions; or upon any building or place vested in trustees for an agricultural or pastoral society for the purposes of a show ground. The Crown has in any such case the right to commute its liability by payment of a sum agreed upon between the council and the Treasurer.

(vi.) *Borrowing Powers.* Power is given to the council to borrow money either—

(*a*) By the sale of debentures under provisions of the Local Bodies Loans Act for the purpose of permanent works and undertakings, or for the purpose of liquidating the principal sum owing on account of a previous loan; or

(*b*) By way of temporary advances against rates to an amount not exceeding one-half the expected total proceeds of such rate. Temporary advances must be paid off within twelve months of the date of borrowing.

(vii.) *General By-laws.* The councils have wide powers to make by-laws for the general purposes of the Act, and particularly in connection with the following matters:—The trespass and agistment of animals; the erection or demolition of buildings, awnings, and temporary structures; the prevention and extinction of fires; the granting of licenses; the regulation of markets and weighbridges and the establishment of rents and fees for the use thereof; the regulation or the prohibition of the introduction of any pest or anything affected by a pest; the control of public safety and the preservation of public decency; the control and management of roads and footways; the imposition and collection of tolls upon roads and bridges, and of rates and dues upon ferries, wharves, tramways, jetties, piers, and markets under the control of the council; the regulation of various trades and callings; the control of the general traffic in public places, boats and boatmen, vehicles, steam rollers and bicycles.

(viii.) *Water Districts.* Any number of municipalities, situated so as to be capable of taking advantage collectively of some common water system or catchment area, may by petition to the Governor be constituted a water district under the Act. In every case where a water district is proclaimed upon the joint petition of two or more municipal councils the management of such district is in the hands of a joint council consisting of such a number of members of each of the councils as the Governor may determine. This council is invested with borrowing and rating powers and may supply water within the district on such terms as it may fix, provided that no water may be supplied for irrigation until domestic and stock supply purposes have first been satisfied. Provision is also made in the Act for uniting municipalities for the purpose of carrying out sewerage, irrigation, or water conservation schemes for the common benefit of the municipalities, or for any other purpose authorised by the Act, such as, in the opinion of the Governor, is likely to be of permanent utility, and is best capable of being carried out by concerted action.

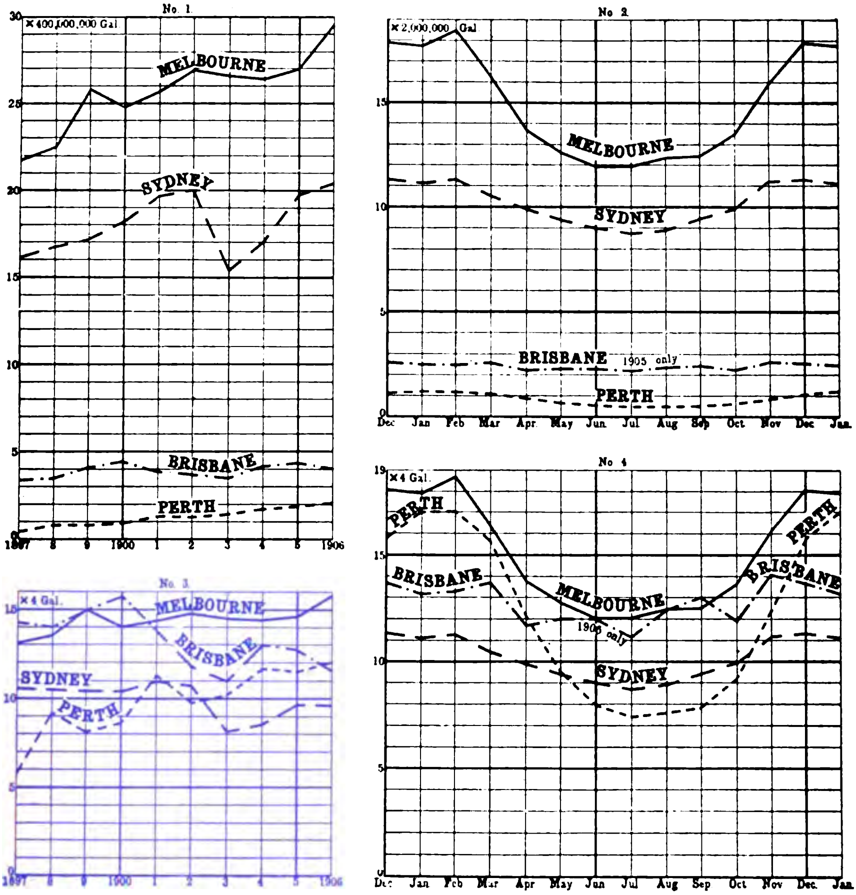
3. **Annual Value, Revenue, and Expenditure of Municipalities.**—The following table shews the annual value, total receipts, and expenditure of municipalities for the years 1901 to 1906, inclusive:—

TASMANIA.—ANNUAL VALUE, REVENUE, AND EXPENDITURE OF MUNICIPALITIES, 1901 TO 1906.

Year.	Number of Municipalities.	Annual Value of Ratable Property.	Revenue.				Expenditure.[2]
			From Rates.	From Govt.	'rom other Sources.[1]	Total.	
		£	£	£	£	£	£
1901 ...	21	683,039	55,953	3,798	47,880	107,631	109,811
1902 ...		688,745	57,526	4,498	51,870	113,894	107,932
1903 ...		702,067	56,367	500	50,890	107,757	110,162
1904 ...		718,635	61,107	...	85,045	146,152	141,202
1905 ...		739,005	60,644	...	89,657	150,291	153,937
1906 ...		749,537	64,059	150	72,610	136,819	140,745

1. Including sums derived from loans. 2. Including repayments of loans.

GRAPHS SHEWING CONSUMPTION OF WATER IN METROPOLITAN AREAS.—MELBOURNE, SYDNEY, BRISBANE, AND PERTH, 1897 TO 1906.



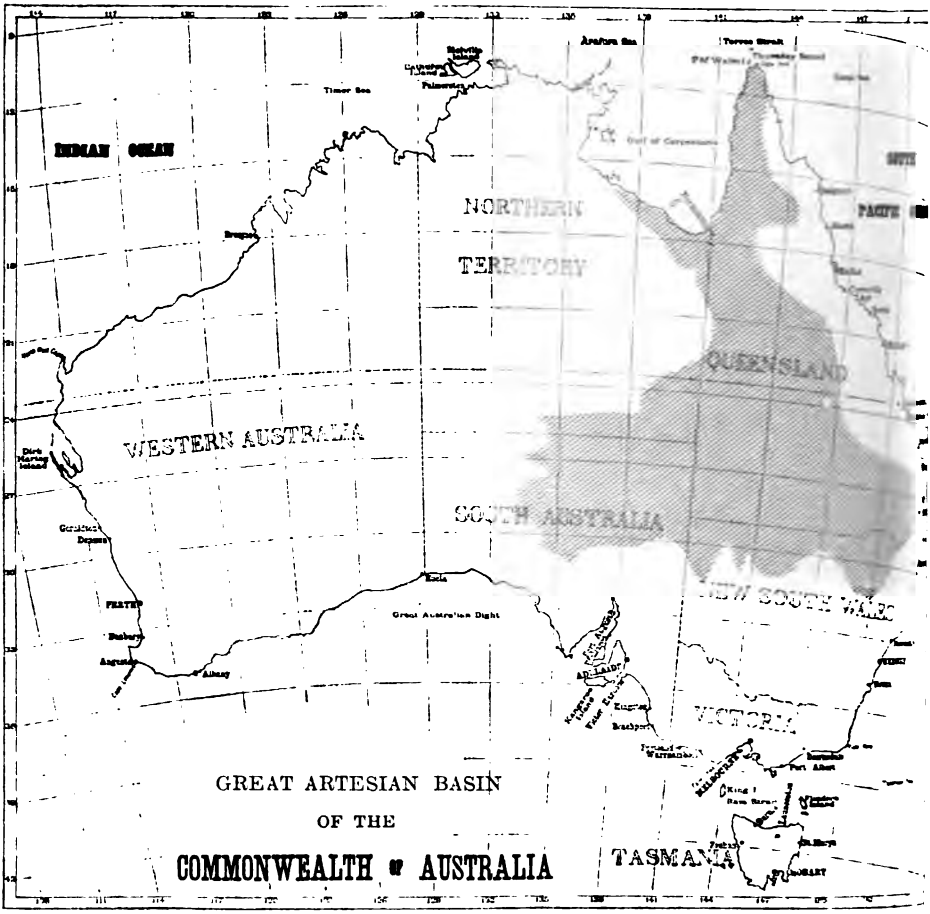
EXPLANATION OF GRAPHS.—No. 1.—Total annual consumption of water in metropolitan area, 1897 to 1906. The base of each small rectangle represents an interval of one year, and the vertical height represents 400,000,000 gallons.

No. 2.—Average daily consumption of water in metropolitan area during each month of the year. (Mean of period 1897 to 1906.) The base of each small rectangle represents an interval of one month, and the vertical height represents 2,000,000 gallons.

No. 3.—Average daily consumption of water per head of population in metropolitan area. 1897 to 1906. The base of each small rectangle represents an interval of one year, and the vertical height represents 4 gallons.

No. 4.—Average daily consumption of water per head of population in metropolitan area during each month of the year. (Mean of period 1897 to 1906.) The base of each small rectangle represents an interval of one month, and the vertical height represents 4 gallons.

MAP SHEWING THE POSITION AND EXTENT OF THE "GREAT AUSTRALIAN ARTESIAN BASIN."



The area occupied by this basin, coloured blue on map, is approximately 569,000 square miles of which 376,000 square miles are in Queensland, 110,000 square miles in South Australia, and 83,000 square miles in New South Wales.

4. **Annual Value, Revenue, and Expenditure of Town Boards, 1901 to 1906.**—The following table gives similar particulars to the above for town boards:—

TASMANIA.—ANNUAL VALUE, REVENUE, AND EXPENDITURE OF TOWN BOARDS, 1901 TO 1906.

Year.	Number of Town Boards.	Annual Value of Ratable Property.	Receipts.				Expenditure.
			From Rates.	From Govt.[1]	From other Sources.	Total.	
		£	£	£	£	£	£
1901 ...	20	154,101	16,014	9,073	3,847	28,934	28,851
1902 ...	20	165,937	10,171	6,645	8,691	25,507	25,015
1903 ...	22	172,905	10,321	4,758	10,077	25,156	24,302
1904 ...	23	192,572	13,320	6,599	10,468	30,387	29,735
1905 ...	23	194,878	13,328	5,278	14,962	33,568	32,193
1906 ...	23	243,424	14,284	592	15,173	30,029	34,080

[1] Including loans.

5. **Total Revenue and Expenditure of Local Bodies, 1901 to 1906.**—Particulars as to Road Boards and Road Trusts are given in the chapter of this book on "Roads and Bridges." In addition to the local authorities already mentioned, Marine Boards have been established at seven ports in Tasmania for the purposes of constructing and maintaining wharves and jetties and of controlling all matters relating to the shipping in the respective ports. Twenty water trusts and forty cemetery trusts have also been established in connection with municipal bodies. The subjoined statement shews the total revenue and expenditure for all local bodies, exclusive of all amounts contributed by the general Government, during each year from 1901 to 1906, inclusive:—

TASMANIA.—REVENUE AND EXPENDITURE OF ALL LOCAL BODIES, EXCLUSIVE OF AMOUNTS CONTRIBUTED BY THE GENERAL GOVERNMENT, 1901 TO 1906.

Particulars.	1901.	1902.	1903	1904.	1905.	1906.
* REVENUE.						
	£	£	£	£	£	£
Marine Boards and Lighthouses	44,114	44,095	36,827	50,016	60,672	77,224
Municipalities	103,833	109,397	107,349	146,152	150,291	136,669
Road and Bridge Trusts ...	21,564	22,794	25,124	28,879	28,663	30,271
Cemetery Trusts	1,093	1,062	1,087	1,227	2,078	1,121
Town Boards	19,861	18,862	19,506	24,304	28,290	29,457
Water Trusts	6,794	8,378	8,427	9,318	12,623	12,363
Total	197,259	204,588	198,320	259,896	282,557	287,105
†EXPENDITURE.						
	£	£	£	£	£	£
Marine Boards and Lighthouses	43,157	42,525	36,006	57,804	54,867	68,114
Municipalities	106,013	103,434	109,662	141,202	153,937	140,595
Road and Bridge Trusts ...	18,941	20,429	30,133	28,703	27,166	30,060
Cemetery Trusts	1,036	1,134	1,062	1,204	1,152	1,208
Town Boards	19,778	18,370	19,752	23,351	26,815	33,508
Water Trusts	6,391	8,451	8,967	6,697	12,593	12,446
Total	195,316	194,343	205.582	258,961	276,530	285,931

* Exclusive of amounts contributed by the general Government. † Exclusive of expenditure from Government contributions.

The total amount advanced by the general Government to local bodies for public works up to the 30th June, 1906, was £391,838, of which £78,350 had been advanced for the purpose of water supply, £10,700 for light, £6937 for buildings, £154,476 for harbour improvements, £15,100 for roads and streets, £3600 for the redemption of debentures, £83,334 for drainage, £2841 for cemeteries, £1500 for recreation grounds, and the remaining £35,000 for the lighting and water supply of Launceston.

6. **Hobart Water Supply.**—The original water supply of Hobart was obtained from a stream known as the Hobart Rivulet, flowing from Mount Wellington, the works being carried out in 1831 by the Imperial Government. These works consisted of an aqueduct and a line of cast-iron pipes, the water being distributed to several points known as "wells." By an Act of the State Parliament passed in 1860 the works were transferred to the municipality. Under this Act certain additional streams flowing from Mount Wellington were acquired as sources of supply, and a storage reservoir containing 45,000,000 gallons was constructed. The catchment area on Mount Wellington at present comprises an area of 4200 acres, the sources of supply having been extended at various times as far as the North West Bay River, fifteen miles from Hobart.

(i.) *Storage Reservoirs.* There are two storage reservoirs about 2½ miles from the city. One contains 68,000,000 gallons and is 502 feet above sea-level, while the other contains 45,000,000 gallons and is 447 feet above sea-level. The whole of the supply is by gravitation. The water is brought from the various streams by means of stone aqueducts and cast-iron pipes to the reservoirs, and thence by three 10-inch cast-iron mains, of which two lead to the distributing reservoirs and one direct to the shipping and southern portion of the city.

(ii.) *Capital Cost, Tenements Connected, Length of Mains, Revenue and Expenditure, 1906.* The total capital cost to the end of 1906 was £185,853, but a considerable amount of reticulation work has been done out of revenue and not charged to capital account. The outstanding loans at the end of 1906 amounted to £160,400. At the same date the number of tenements supplied in the city and suburbs was 7100, the population at the last census in 1901 was 32,418, and the length of reticulation mains at the end of 1906 was seventy-four miles. The revenue and expenditure for the last seven years were as follows:—

HOBART WATERWORKS.—REVENUE AND EXPENDITURE, 1901 TO 1907.

Particulars.	1901.	1902.	1903.	1904.	1905.	1906.	1907.
	£	£	£	£	£	£	£
Revenue ...	18,806	19,091	18,862	20,200	20,127	19,125	*18,258
Expenditure ...	20,161	16,126	16,624	15,667	16,576	15,817	*18,670

* Approximate.

(iii.) *Proposed Extensions.* Parliamentary sanction to borrow £63,000 has been obtained for the purpose of improving the water supply of the city and suburbs of Hobart; £49,000 of this amount is to be spent on the construction of a new storage reservoir.

Graphs relating to the water supply of Hobart may be found on page 859 hereinbefore.

7. **Hobart Sewerage System.**—A scheme for the construction of a sewerage system in Hobart was adopted in 1903. The sewage is collected and treated in septic tanks and is then discharged into the estuary of the River Derwent. Up to the end of the year 1907 about twenty-six miles of sewers had been laid, and 1809 tenements, sewering a population of 9045, had been connected at a cost of £100,000. During the year 1907 the average quantity of sewage treated daily was 278,000 gallons, the revenue for the year being £3107. Extensions are in progress with a view to completing the sewering of over 2000 acres so as to serve an estimated population of about 30,000 people.

§ 8. Capital Cities of the States.

1. **Population, Area, Finances, etc.**—In the statement given below various particulars relating to the capital cities of the several States are given. Unless otherwise stated the figures shewn refer to the cities only and do not include the suburbs :—

SUMMARY OF PARTICULARS RELATING TO CAPITAL CITIES OF EACH STATE.

Particulars.			Sydney.	Melb.	Brisb'ne.	Adelaide.	Perth.	Hobart.
Date of constitution as a municipality			1842	1842	1859	1840	1871	1852
Area of ...	the city proper	Acres	2,750	7,396	3,520	3.700	2,300	2,703
	the suburbs	Acres	90,335	156,084	191,680	95,658	10,999	4,503
Population of city and suburbs	1861		95,789	139,916	6,051	18,303	[1]	19,449
	1881		224,939	282,947	31,109	103,864	5,882	21,118
	1901		487,900	494,129	119,428	162,261	36,274	32,418
	1906		538,800	526,400	132,468	175,641	53,800	34,985
Population of city, 1906 (estimated) ...			124,486	100,840	37,690	40,045	29,760	25,389
Capital value of ratable property	1861	£	7,600,000[2]	6,526,760[2]	600,000[2]	3,300,000[2]	[1]	[1]
	1881	£	14,498,570[2]	9,586,730[2]	2,890,038	7,100,000[2]	[1]	1,800,000[2]
	1901	£	43,370,000	26,535,700	5,830,809[3]	8,690,960	3,554,778[3]	3,065,017
	1906	£	45,545,700	32,439,040	6,128,032[3]	9,315,000	4,281,770[3]	3,470,030
Annual value of ratable property	1861	£	760,000	652,676	52,550	165,481	[1]	[1]
	1881	£	1,449,857	958,673	231,202	384,101	[1]	110,800
	1901	£	2,168,500	1,326,785	388,720[2]	434,548	277,166	173,813
	1906	£	2,312,830	1,621,952	408,600[2]	465,750	426,828	198,000
Cost of works within metropolitan area	Water works	£	4,847,978	3,793,390	774,921	1,675,313	486,857	185,854
	Sewerage works	£	4,330,397	5,258,156	...	622,034	...	100,000
	Gas works	£	[1]	32,000[4]	241,000	353,000	82,076	110,000
	Electric light works	£	[1]	415,150[4]	77,290	210,178	121,100	
Revenue	1861	£	71,299	74,556	4,478	21,873	[1]	24,457
	1881	£	149,884	126,586	45,393	88,246	[1]	43,844
	1901	£	295,801	220,010	81,335	60,055	65,622	45,088
	1906	£	297,129	288,016	81,124	68,066	71,536	49,731
Expenditure	1861	£	83,277	89,237	14,788	20,345	[1]	26,691[5]
	1881	£	145,512	114,071	45,491	73,886	[1]	50,729[5]
	1901	£	277,898	234,628	76,265	59,107	79,601	60,876[5]
	1906	£	302,069	272,928	86,593	64,999	75,825	53,347[5]
Loans current		£	1,735,000	1,819,000	379,428	59,900	230,700	234,900
Sinking funds		£	145,850	91,524	8,647	6,254	50,542	12,713
Length of roads within city	Wood-blocked	Miles	20⅔	10[2]	1⅔	...	2	...
	Macadamised	Miles	96⅔	137[2]	75	93	77	38
	Other	Miles		44[2]	6⅔	...	4¼	½

1. Not available. 2. Estimated. 3. Unimproved value. 4. Within city boundaries only. 5. Including disbursements from loans.

2. **Date of First Settlement.**—(i.) *Sydney*. 26th January, 1788, when Captain Phillip, in command of H.M.S. "Sirius" and the first fleet conveying 571 male and 158 female convicts took formal possession of Sydney Cove.

(ii.) *Melbourne*. 1835-6. Batman and Fawkner, colonists from Tasmania, settled on the banks of the River Yarra.

(iii.) *Brisbane*. 1824. Lieutenant Oxley chose the site for a penal station, and the site subsequently received the approval of the Governor, Sir Thomas Brisbane.

(iv.) *Adelaide*. 1836. Colonel Light founded the settlement. The survey of the town sections commenced on 11th January, 1837, and was completed on the 10th March.

(v.) *Perth*. 17th June, 1829, Lieutenant-Governor Stirling with sixty-nine intended settlers and a detachment of marines disembarked and encamped on the north bank of the Swan River, now Rous Head.

(vi.) *Hobart*. 21st February, 1804, when Colonel Collins, R.M., the first Lieutenant-Governor of Van Diemen's Land, selected the site now occupied by the city for settlement.

SECTION XXVII.

INDUSTRIAL UNIONISM AND INDUSTRIAL LEGISLATION.

§ 1. Development of Trade Unions in Australia.

1. **General.**—In the following account of the origin and development of trade unions in Australia, and of legislation affecting them, as well as of the history and nature of industrial legislation generally in Australia, brevity has necessitated the abandonment of all matters of minor detail, such for example, as a sketch of the differences between the laws of individual States, and cognate matters.

Each State of the Commonwealth, it may be said, has enacted, with more or less elaboration, legislation respecting trade unions and respecting the regulation of the conditions of industrial life, particularly those of factory employment. Some of the States have also established machinery for the regulation of wages, as well as of other matters connected with employment.

At the present time there is an obvious tendency to adjust such matters throughout Australia on uniform lines. The industrial condition of any State of the Commonwealth naturally reacts quickly on any other State. This is one of the consequences of a unified tariff, and of the fact that the general economic conditions of any one part of the Commonwealth must necessarily affect very intimately any other part. An expression of the intimacy of these economic and industrial relations of different parts is seen, for example, in the refusal of an Arbitration Court in New South Wales to fix wages in the boot trade in that State at a higher rate than that fixed by the Wages Board in Victoria, because of the additional burden which such a rate would place on local manufacturers.

2. **History of Unions in Australia.**—(i.) *Commencement of Unionism.* The first trade union in Australia was the "Operative Masons' Society," established in Melbourne in 1850, and in 1851 a branch of the "English Amalgamated Society of Engineers" was founded in Sydney. For many years the only unions existing were practically those formed by the several branches of the building trades. They were all subject to the English law prohibiting conspiracies and combinations in restraint of trade, though it does not appear that such law was ever put in force in Australia. The main objects of the early unions were the limitation of the working week to forty-eight hours, and such minor and friendly society benefits as are usual amongst the older unions, the former object being for many years the chief link between the unions. It is, however, difficult to obtain detailed information concerning the unions prior to trade union legislation. In 1857 only nine trades and 700 men took part in the Melbourne Eight Hours procession, but the establishment of new industries caused a steady increase in numbers. From 1869 to 1879 five trades entered the ranks of the unionists of Victoria. From 1880 to 1890 there was great activity in the organisation of labour, more particularly at the end of that period. In sympathy with the widespread industrial unrest in England the occurrence of similar unrest in Australia drew the wage-earners into the unions in large numbers: the return of industrial peace, however, was marked by a decrease in numbers.

(ii.) *Organisation of Unions.* The first regular association of unions in Australia was the Trades Committee in Melbourne, formed in 1859, which afterwards became the present Trades and Labour Council. Similar councils now exist in all the States. Composed of delegates from the unions they exercise a general care over the interests of their members.

(iii.) *Union Acts.* The Trade Union Acts of England and the collateral Conspiracy and Protection of Property Act have been copied by the States, the Acts also providing for unions of employers. The latter provision has been but slightly utilised, however, as apparently it offers no well-defined inducement. South Australia adopted the Acts in 1876, New South Wales in 1881, Victoria in 1884, Queensland in 1886, Tasmania in 1889, and Western Australia in 1902.

The Acts referred to provide for the legal recognition of combinations which come under the definition of trade unions; the registration of unions of seven or more persons, the registration of councils or other bodies to which registered trade unions are affiliated; the vesting of union property in registered trustees, with penal provisions in respect of defaulting officers. The registered unions are required to furnish annual returns of members and funds to a special department.

3. **Operations and Organisation of Unions subsequent to the Acts.**—(i.) *Unions.* Except as hereinafter mentioned, the unions do not avail themselves of the Trade Union Acts to any large extent, and information concerning them in some States is consequently not at present available. The operation of the Industrial Arbitration Acts of New South Wales and Western Australia—especially the former, which alone authorises trades unions, as such, to register as industrial unions—and to some extent of the Commonwealth Act, shews the position of the unions in the States mentioned, and also the position of a few of the unions in other States. In the tables hereinafter such information as is available is afforded, but such tables are a very incomplete guide to the position of unionism in Australia.

For convenience of comparison the tables of industrial unions registered under the Industrial Arbitration Acts are placed immediately after the table of registered trade unions. The discrepancy between the numbers of registered and unregistered unions in some States may be gauged by the fact that there are seventy-three unions affiliated with the Melbourne Trades Hall, thirteen with the Bendigo, and fifteen with the Ballarat Trades Hall, making a total of 101. In Victoria only seven, however, are registered, and some of the latter are not affiliated. In South Australia there are sixty unions affiliated to the local Trades Council, but only twenty-three are registered. In Western Australia the number of unionists registered under the Industrial Arbitration Act is about 33 per cent. more than the number registered under the Trade Union Acts. In New South Wales the numbers are almost identical.

The failure to register under the Trade Union Acts does not deprive the unions of the privileges conferred by the Conspiracy Acts.

The largest individual union in Australia is the Australian Workers' Union, whose members are pastoral workers (shearers, etc.), and number more than 20,000. It has branches in Queensland, New South Wales, and Victoria, and the east centre of South Australia, covering the whole of the principal wool-growing districts of Australia. It maintains newspapers in Sydney and Brisbane, each of which is known as *The Worker*.

(ii.) *Workmen and Employers in Unions.* Available statistics at present do not shew what proportion of Australian workmen are members of trade unions, though a census of occupations would at least for some States enable an estimate to be made.

The Acts are but little availed of by employers.

(iii.) *Concerted Action.* An intercolonial congress of delegates of trades unions was first held in Sydney in 1879. At the second congress in Melbourne, in 1884, sixty-nine delegates from New South Wales, Victoria, and South Australia were present, representing forty-one unions, branches, or societies. Following the methods of European associations the Australian unions sought to achieve an improved condition for their members by the establishment of rules concerning minimum wage, limited hours of toil, the restriction of the number of apprentices and improvers, and the prohibition of the employment of non-union labour. Some of the unions refuse to admit to membership any but skilled journeymen, on the ground that their object is to encourage the attainment of proper skill.

(iv.) *Representation in Parliament.* It was during the decade 1880-1890 that the trade unions of Australia espoused direct legislative representation and advocated State interference between employer and employé. This policy has been called "new unionism." A resolution affirming the desirability of Parliamentary representation of labour being carried at the congress of 1884, a number of members representing the special interests of the wage-earners were elected to the Legislatures of some of the States, but the unions took no steps to obtain representation by men chosen from among their own ranks until after the great labour troubles of 1890-1892. In that period serious strikes occurred in the maritime, shearing, and mining industries, and it was then that the Labour party proper was formed, though a certain amount of ameliorative legislation had already found its way into the Statute books of the States.

Triennial federal conferences laid down a policy for the party, but at present there is no authoritative Commonwealth organisation, and the policy is not binding upon a State league. The Political Labour Council controls political and the Trades Hall Council trade union matters. The former consists of delegates from both unions and "branches." The branches are coterminous with State electoral districts, and nominate candidates for those districts. Candidates for the Commonwealth Senate are balloted for by all league members in the State, and for the Commonwealth House of Representatives by the branches in the constituency.

4. **Registered Trade Unions and Industrial Associations.**—(i.) *Unions of Employés.* The statistics of registered trade unions of employés not only do not represent the position of unionism, but, in addition, the statistics themselves for past years are so defective as to be practically valueless. Only those for 1906, therefore, are given; the figures are as hereunder:—

REGISTERED TRADE UNIONS OF EMPLOYES, AUSTRALIA, 1906.

State.	No. of Unions.	No. of Members.	Receipts.	Expenditure.	Funds.
			£	£	£
New South Wales	134*	87,435	70,731	63,426	81,122
Victoria	7	8,820	6,750	6,486	5,418
Queensland	19	8,332	7,159	7,195	5,208
South Australia	23	5,106	6,809	5,347	12,926
Western Australia	82†	12,031	31,018	25,948	21,506
Tasmania	1	53	200	220	343
Commonwealth ...	266	121,777	122,667	108,622	126,523

* 129 unions filed returns. † Includes associations and councils.

(ii.) *Unions of Employers.* There are in New South Wales two unions of employers, with 1043 members; in Queensland three, with 135 members; and in Western Australia fifty-seven, with 534 members.

5. **Registration under Industrial Arbitration Acts.**—New South Wales and Western Australia are the only States with Industrial Arbitration Acts under which industrial associations can be and actually are registered. The development of such registered associations during the period 1901 to 1906, and a comparison with the development of trade unions for the period 1903 to 1906, are given in the tables hereunder:—

INDUSTRIAL ASSOCIATIONS REGISTERED UNDER INDUSTRIAL ARBITRATION ACTS[1] (INCLUDING COUNCILS AND ASSOCIATIONS).

EMPLOYERS.

Under Act of—	1901.			1902.			1903.		
	Unions	Members.	Funds.	Unions	Members.	Funds.	Unions	Members.	Funds.
			£			£			£
N.S.W. ...	...	...	...	109	2,302	...	119	2,916	...
W. Aust.	7	54	...	15	199	...	17	221	98
C'wealth	...	...	...	...	...	...	...	...	...
	1904.			1905.			1906.		
N.S.W. ...	122	3,204	...	120	3,343	...	107	3,165	...
W. Aust.	45	441	98	59	520	27	57	534	—17
C'wealth	...	...	...	...	...	...	1	6	...

EMPLOYES.

Under Act of—	1901.			1902.			1903.		
	Unions	Members.	Funds.	Unions	Members.	Funds.	Unions	Members.	Funds.
N.S.W. ...	...	...	...	87	58,203	...	124	63,510	...
W. Aust.	*56	8,920	...	*80	11,442	...	†132	15,294	†19,250
C'wealth	...	...	...	...	...	...	...	...	...
	1904.			1905.			1906.		
N.S.W. ...	127	71,031	...	122	78,472	...	121	88,075	...
W. Aust.	§140	15,743	§22,421	¶140	15,461	¶25,255	‖130	16,015	‖26,000
C'wealth	...	...	...	...	...	...	20	‡41,413	‡17,460

[1] New South Wales and Western Australia are the only States of the Commonwealth with Industrial Arbitration Acts.

* Includes two councils and associations. † Includes five councils and associations ‡ 1906-7. The funds are of five unions only, the rest being registered less than twelve months. § Includes eight councils and associations with £5783 funds. ¶ Includes seven councils and associations with £6427 funds. ‖ Includes six councils and associations with £5443 funds.

TRADE AND INDUSTRIAL UNIONS COMPARED.

Year.	New South Wales.						Western Australia					
	Trade Unions.			Industrial Unions.			Trade Unions.			Industrial Unions.		
	No.	Members	Funds.	No.	Members.	Funds.	No.	Members.	Funds	No.	Members.	Funds.
			£						£			£
1903	*135	72,312	63,540	124	63,510	†	65	9,999	†	132	15,294	19,250
1904	*134	79,815	69,409	127	71,031	†	83	11,025	†	140	15,743	22,421
1905	*135	84,893	73,324	122	78,472	†	80	11,235	†	140	15,461	25,225
1906	*129	87,435	81,122	121	88,075	†	82	12,031	21,506	130	16,015	26,000

* Number filing returns. † No information.

§ 2. Laws Relating to Conditions of Labour.

1. **Tabular Statement of Statutes affecting Labour.**—The following tabular statement shews at a glance the various statutes in the several States of the Commonwealth which affect, more or less directly, the conditions of labour generally :—

TABLE OF STATUTES.

New South Wales.	Victoria.	Queensland.	South Aust.	Western Aust.	Tasmania.
Factories & Shops 1896 Early Closing 1899 " 1900 " 1906	Factories and Shops 1905 (2) Factories and Shops 1907	Factories and Shops 1900	Factories 1894 " 1900 " 1904 " 1906 Early Closing 1900-1, 2, 3	Factories 1904 Early Closing 1902 Early Closing 1904 (2) Seats for Shop Assistants 1899	Women and Children Employment 1884 " " 1905 Chimn'y Sweepers 1882
Mines Inspection 1901 Coal Mine Regulation 1902 Coal Mine Regulation 1905 Miners' Accident Relief 1900-1	Mines 1897	Mining 1898 " 1901 " 1902	Mining 1893	Mines Regulation 1906 Goldfields Act 1895 Coal Mines Regulation 1902 Sunday Labour in Mines 1899	Mining 1900
Contractors' Debts 1897	Employers and Employés	Contractors' & Workmen's Lien 1906 Wages 1870 " 1874	Workers' Liens 1893 Workers' Liens 1896	Workers' Wages 1898	—
Attachment of Wages Limitation 1900	—	Wages (as above)	Wages Attachment 1898	Workers' Wages 1898	Wages Attachment 1900
Public Health 1896	Health 1890	Health 1886 " 1890 " 1900	—	Health 1898 " 1906	Public Health 1903
Truck 1900-1	See Factories	See Factories	See Factories	Truck 1899, 1900-4	—
Shearers' Accommodation 1901	—	Shearers' and Sugarworkers' Accommodation 1905-6	Shearers' Accommodation 1905	—	—
—	Closer Settlement (Workers' Homes)	—	—	—	—
—	Boilers' Inspection	—	—	Steam Boilers 1897	Inspection of Boilers
—	Servants' Registry offices 1897	—	—	Employment Brokers 1897 Imported Labour Registry 1897	—
Masters & Servants	Employers and Employés	—	—	—	—
Apprentices 1901	Masters and Apprentices 1890	Apprentices 1828 " 1844 Master and Servants 1861	Masters & Servants 1878	Masters and Apprentices 1873 Masters & Servants 1892	Masters & Servants 1856 " " 1882 " " 1884 " " 1887
Employers' Liability	Employers and Employés (Employers' Liability)	Employers' Liability 1886-8 Workers' Compensation 1905	Employers' Liability 1884-89 Workers' Compensation 1900 Workers' Compensation 1904	Employers' Liability 1894 Workers' Compensation 1902	Employers' Liability 1895, 1898, 1903
Bankruptcy 1898 (preference to wages)	Insolvency	Insolvency 1874-6	Insolvency	Insolvency Associations Incorporation 1895	Bankruptcy 1870, 1899
—	—	—	—	Fisheries 1899	—

2. **Limitation of Hours.**—(i.) *Factories and Mines.* Eight hours a day, or, more accurately, forty-eight hours a week, constitute the limitation of time of labour recognised throughout Australia. The regulation is stated to have originated in Sydney in 1855, when it was demanded by the building employés, and after some friction conceded. The trades gradually urged a division of the day into equal periods for labour, recreation, and rest, and this has become established for a majority of occupations.

There is no general legislation to enforce this idea. The forty-eight hours' limit was, in 1873, enacted in Victoria with reference to women and children in factories, in 1874 with reference to miners, and in those instances is law throughout the Commonwealth. On the establishment of Wages Boards and Arbitration Courts, in the States where those institutions exist, the authorities thus created adopted the rule as part of their determinations and awards wherever it seemed reasonably applicable. Reasonable provision is, however, made by statute or award for overtime working. It may be said that there has been but little opposition in Australia to the establishment of the "eight hours" system.

(ii.) *Shops.* All the States, excepting Tasmania, have statutes containing provisions respecting the hours during which shops may be kept open for business. These provisions, in effect, not only limit the hours during which shop-hands may be employed, but apply also where the shops are tended by the proprietor alone and by himself and family, with, however, certain exceptions, such as exist in the State of Victoria. In that State shops wherein not more than one assistant, whether paid or not, is employed, are permitted to remain open for two hours a day longer than other shops of the same class. The object of this is to relieve the hardship which exists for such persons, for example, as widows who are wholly dependent for a livelihood upon the casual trade of small shops. Generally speaking, the hours during which shops may remain open for business are from 9 a.m. to 6 p.m., but these hours may be varied according to the nature of the business affected. Provision is also made for weekly half-holidays, on which shops must close entirely, with in some cases, however, compensatory provisions permitting them to remain open on one night a week.

(iii.) *Hotels, etc.* Establishments, the opening of which in the evening is presumably necessary for public convenience—such as hotels, restaurants, chemists' shops, etc.—are required to remain open for longer hours or are permitted to do business during hours prohibited in other establishments.

(iv.) *Half-holidays.* The provisions of the early closing laws differ somewhat in each State, but the main objects, namely, the restriction of long hours of labour, are throughout identical. Formerly, in some of the States, there were, and there are still in others, provisions making the early closing of a business, or the selection of a day for a half-holiday, dependent upon the option of the majority of the business people concerned, or upon the local authority. The anomalous results of the system whereby shops on one side of the street bounding two municipalities were open, when those upon the other side were closed, led to the introduction of the compulsory system in force in Victoria, now likely to be introduced in the other States of the Commonwealth. Under the Victorian statutes the hours of business are absolutely fixed by those statutes. Each shopkeeper may elect to have the half-holiday either upon a Wednesday or Saturday, but having made his choice must adhere to it.

Special holidays are provided for carriers.

There are stringent prohibitions against overworking of women and young persons.

3. **General Conditions of Labour.**—(i.) *General.* Aids for the protection of the life, health, and general well-being of the worker are in force in most of the States, and are referred to in the table already given (page 868). Though in some cases founded upon English legislation, they are also in many instances peculiar to Australia. Years of experience and continued amendment have not even yet left them in a settled form. The State of Victoria has the most complete system of industrial legislation, and the

other States are gradually adopting the Victorian statutes, either *en bloc*, or with amendments suggested by local conditions.

(ii.) *Historical.* The first Australian Factories Act was passed in 1873 in Victoria. It was entitled "The Supervision of Workrooms and Factories Statute," and contained only six sections. The existing Victorian Act, passed in 1905, contained originally 163 sections, and is now extended by two amendments of 35 and 40 sections respectively. There are, moreover, numerous regulations in force under its authority. The Act of 1873 defined a "factory" or "workroom" as a place where ten or more persons are engaged for hire in preparing or manufacturing articles for trade or sale. It limited the working day for females to eight hours, and empowered inspection by central or local Boards of Health. It conferred upon the Boards power to regulate the sanitary conditions of factories. This system was found, however, not to be as effective as was hoped. The conditions which have given rise to trouble in the old world tended to reproduce themselves in the young and growing industries of the States. The advocacy of legislation to control the conditions of employment became pronounced in Victoria in 1880, and a strike of tailoresses in Melbourne in 1882 led to a recognition of the real state of affairs. In 1883 a Royal Commission reported the necessity of legislation for the regulation of factories, and in particular pointed out the fact that men were compelled to toil for as many as eighteen hours a day and women sixteen hours, and shewed that the condition of out-workers was very undesirable, that the apprenticeship system was frequently used to obtain labour without remuneration, apprentices being dismissed upon asking for payment at the end of their time. The Factories and Shops Act 1884, while providing for the suppression of many evils in respect of accommodation and lengthy hours, did not touch the two last mentioned. Another Royal Commission sat in 1895, resulting in the Act of 1896, which dealt with the matters previously untouched, and the system of regulation was carried on by the Act of 1900 and the complete codification of the law in 1905.

Similar conditions were found to prevail in other States. New South Wales and Queensland adopted regulative measures in 1896 and subsequent years, and South Australia in 1894, 1900, and 1906; Western Australia followed suit in 1902 and 1904. Tasmania adopted the Victorian Act of 1873 in 1884, with a small extension in 1905, and a Royal Commission in 1907 reported the desirability of legislation.

The same remarks apply in a general way to the condition of employés in shops.

4. **Legislation Regulating Conditions of Labour.**—(i.) *Factories and Shops.* The Factories and Shops Acts and the Early Closing Acts in some States are combined, but in others are separate enactments. The following analysis is descriptive, as a whole, of the legislation now under review:—

(*a*) *Factories* are defined to be places where four or more hands are employed in preparing articles for trade or sale, or in which steam or other power is employed. Any place where one or more Chinamen are working is a factory.

(*b*) The *Minister for Labour* administers the Act with a permanent head of department, known as the Chief Inspector of Factories.

(*c*) *Factories must be registered*, particulars of the nature of them must be given, and a certificate of the suitability of the premises for the purpose intended must be supplied by the Chief Inspector to the local municipal council.

(*d*) *A record of the employés*, giving the names, age, wages, and work of each under twenty-one must be filed annually in the Chief Inspector's office.

(*e*) Employers must post up in a conspicuous manner the name and address of the *district inspector* and certifying *medical practitioner*, the *holidays and working hours* of the factory, the name of the employer, and a list of fines imposed upon employés. The last-mentioned list must be forwarded to the Chief Inspector.

(*f*) *A record of out-work* must be kept and produced to inspectors.

(g) The only *places exempt from registration* are those in which only the near kin of the occupier are employed.

(h) *Out-workers* are required to register.

(i) *Factories must be kept clean.* They must contain a prescribed amount of cubic space for each person employed, and a prescribed amount of ventilation; the ventilation must carry away all injurious impurities generated by the work; proper means of egress must, and fire prevention appliances may, be required to be maintained. Proper sanitary conveniences must be provided and factories must not be used as sleeping places, and any rooms used therefor connected with factories must be effectively separated from them.

(j) Amongst the numerous other provisions for the care of health are clauses *forbidding the employment of women and young persons* for more than five hours without a break for meals. Meals may not be taken in factories unless such factories are of open construction and exempted by the inspector. Employés in noxious trades must be provided with a *proper meal-room.*

(k) Special provisions are made for the *regulation of bakehouses.*

(l) The employment in factories of *children under thirteen years of age* is forbidden.

(m) Women and persons under sixteen years of age may not be employed for more than forty-eight hours in the week, ten hours in a day, or after nine o'clock at night. *Permits to work overtime* are granted when an "unforeseen" press of work occurs, but no more than fifty-one hours per week is to be asked of the above-mentioned persons. Payment for overtime and tea-money must be made.

(n) Special provision is made limiting the hours of work permitted to the Chinese.

(o) *Medical certificates* of fitness are required as a condition precedent to the employment of persons under sixteen years of age. Their work must cease at 6 p.m.

(p) *Guarantees* of an employé's good behaviour are void unless made with the consent of the Minister.

(q) "*Truck*" clauses are also inserted in some of the Acts.

(r) All persons in charge of steam engines or boilers must hold certificates of service or competency.

(s) Provision *safeguarding against accident* is made for the fencing off and proper care of machinery, vats, and other dangerous structures. Persons under eighteen and women are forbidden to clean machinery in motion or work between fixed and traversing parts of self-acting machinery while in motion.

(t) Notice of accidents must be sent to the district inspector.

(u) Provision is made for the stamping of furniture, in order to disclose the manufacturer, and whether it is made by European or Chinese labour.

(v) Shopkeepers are required to provide proper seating accommodation for female employés. (In some States this is the subject of special legislation.)

(w) Wide powers of regulation are granted to the Executive and large penalties imposed, including a penalty by way of compensation to any person injured or the family of any person killed through failure to fence machinery and other dangerous structures.

Tasmania is now the only State where no proper factories legislation has been enacted. The Act mentioned in the table of statutes is a copy of the Victorian Act of 1873.

Other Statutes of similar object are numerous, as the table shews.

(ii.) *Mining Acts* regulate the working of mines. The employment underground of females and of boys under fourteen years is prohibited. No boy under eighteen years may be employed as lander or braceman at any plat or landing place; no lander, braceman, underground worker, or man in charge of motive power may be employed more than eight hours a day. A large number of scientific provisions for the protection of the lives and health of miners are also inserted in the Acts. Enginedrivers must hold certificates of competency. Persons may be licensed to certify to the condition of boilers. Provision is made to enable injured persons or the relatives of persons killed to recover damages if the injury or death results from a breach of the regulations above referred to. Inspection of mines is fully provided for. Sunday labour is forbidden.

(iii.) *Other Acts.* (*a*) *The English Employers' Liability Acts*, and in some cases the Workmen's Compensation Act 1897, have been adopted by the States. In some States the former Act is extended to seamen.

(*b*) Power is given to workmen to *attach moneys* due to a contractor who employs them in order to satisfy a claim for wages. Such wages are made a first charge on moneys due to a contractor.

(*c*) Workmen are given a *lien for wages* over material whereon they are working, even if it becomes part of other property. This is in addition to the common law lien, which ceases when possession of the property is parted with.

(*d*) The *Conspiracy and Protection of Property Act of England* (38 and 39 Vic., c. 86) has been adopted.

(*e*) *Servants' Registry Offices* are placed under administrative control, and the rates of commission chargeable are fixed by regulation.

(*f*) Provision is made for the *compulsory resumption of suburban lands* to provide workers' homes.

(*g*) Workmen's *wages are protected from attachment.*

The results of the legislation described must be sought in the Reports of the Inspectors of Factories of the several States. Generally speaking, the perusal of these reports and of the reports of Royal Commissions which have enquired into the working of the Acts, affords satisfactory evidence that they have, on the whole, effected their objects.

§ 3. Legislative Regulation of Wages and Terms of Contract.

1. **General.**—Two systems, based upon different principles, exist in Australia for the regulation of wages and general terms of contracts of employment. A "Wages Board" system exists in Victoria and South Australia, and an Arbitration Court in New South Wales and Western Australia. There is also the Arbitration Court of the Commonwealth, which has power, however, to deal only with matters extending beyond the limits of a single State.

2. **Wages Boards.**—This system was introduced in Victoria by the Factories and Shops Act of 1896. The original Bill made provision only for the regulation of the wages of women and children, but was afterwards amended in Parliament to extend the system to adult operatives of both sexes.

The Act of 1896 made provision for the regulation of wages only in the clothing and furniture trades and the bread-making and butchering trades. By an Act of 1900 the operations of the Act were extended to include all persons employed either inside or outside a "factory or workroom"—see sec. 4, i. (*a*)—in any trade usually carried on therein. This section is now in the Act of 1905. By an Act of 1907 the system was extended to all persons wheresoever employed in a "factory," trade, and also to shop employés, carters and drivers and their assistants, persons employed in connection with buildings or quarrying, or the preparation of firewood for sale or the distribution of wood, coke, or coal.

The regulation is effected by a Board, called a Special Board, to distinguish it from the Board of Health. Boards for the regulation of wages in the trades specified in the Act of 1896 are appointed as a matter of course, and by the Executive other Boards are appointed only if a resolution for appointment be passed by both Houses of Parliament. A Board consists of from four to ten members, who must be or have been at a recent time prior to appointment engaged in the trade concerned. Employers and employés are equally represented. If one-fifth of the employers or employés object to a representative nominated for them they may elect a representative. Originally the Board was elected in the first instance, but the difficulty of compiling electoral rolls led to the adoption of the present system, which has proved satisfactory. The Furniture Board is nominated outright owing to the preponderance of Chinese. An independent chairman, nominated by the Board, is appointed by the Executive. A Board holds office for three years.

The Board has power to determine the lowest wages, prices, or rates to be paid to persons or classes of persons coming within the Act for wholly or partly preparing, manufacturing, or repairing articles, and for other services rendered, and may fix special rates for aged, infirm, and slow workers.

The Board fixes the hours of work and may limit the number of "improvers" to be employed (usually done by prescribing so many to each journeyman employed). There is no power in Victoria to limit the number of apprentices employed. Such a power exists in South Australia. The Board fixes the wages of apprentices and improvers according to age, sex, and experience, and may fix a graduated scale of rates calculated on the same basis. Apprentices bound for less than three years are improvers, unless the Minister sanctions a shorter period of apprenticeship on account of previous experience in the trade. The Minister may sanction the employment of an improver over twenty-one years of age at a rate proportionate to his experience. Out-workers in the clothing trade must be paid piece rates. Manufacturers may, by leave of the Board, fix their own piece rates, if calculated upon the average wages of time workers as fixed by the Board.

Licenses for twelve months to work at a fixed rate lower than the minimum rate may be granted by the Chief Inspector of Factories to persons unable to obtain employment by reason of age, slowness, or infirmity. Licenses are renewable.

Determinations remain in force till altered by a Board or the Court of Appeal. These determinations apply to all cities and towns and such boroughs as the Executive determines, and the Executive may also apply them to any shire within ten miles of a city or town, or beyond that distance, if the shire council petitions to that effect. (Similar provisions are in force in other States.)

The children of an employer are exempt from a determination.

The Executive may direct a Board to fix out-workers' rates and the rates payable in allied trades.

Penalties are fixed for the direct or indirect contravention of determinations, the obedience to which is ascertained by examination of the records of wages, etc. (Sec. 4, i. *a*.)

A Court of Appeal, consisting of a Supreme Court Judge, has power to review determinations of the Boards. The Court may appoint assessors to assist the Judge.

The Acts fix an absolute weekly minimum wage, and the evasion of this provision in the case of females employed in the clothing trade by charging an apprenticeship premium is prevented by the prohibition of all such premiums in that particular case. This absolute minimum provision does not exist in New South Wales.

South Australia adopted the Wages Board system in 1900, 1904, and 1906, but the first-mentioned Act was rendered inoperative owing to the disallowance by Parliament of the regulations necessary for carrying it into effect. The Act of 1904 revived the Wages Board system in respect to women and children employed in clothing and whitework trades. The action of this statute was paralysed by a decision, the effect of which was to prevent the fixing of a graduated scale of wages as is done by the Victorian Boards. The necessity for some protection to the persons intended to be benefited by these statutes was urged in the annual reports of the Chief Inspector of Factories, but, until 1906, without effect. Many employers, however, voluntarily complied with the Boards' determinations, though these were without legal force. The system has been brought into full operation by the Act of 1906, which preceded the Victorian Act of 1907, in extending the system to other than factory trades, and is of a still wider scope than the Victorian Act.

It may be noted that the Boards of Conciliation, appointed in England under the Conciliation Act 1897, appear to correspond to the Australian Wages Boards in a remarkable degree, and not in any way to the Arbitration Courts of Australia, inasmuch as they are appointed for each trade or calling, and not to adjudicate generally upon any cases which come before them.

3. **The Arbitration Court System.**—(i.) *Acts in force.* The following is a general account of the main features of the Compulsory Arbitration laws of Australia. A few important divergences between the Acts are noted.

The Acts in force are as follows:—

South Australia: The Conciliation Act 1894.
Western Australia: The Industrial Conciliation and Arbitration Act 1902.
New South Wales: The Industrial Arbitration Acts 1901 and 1905.
Commonwealth: The Commonwealth Conciliation and Arbitration Act 1904.

(ii.) *Significance of Acts.* In Victoria in 1891, and in New South Wales in 1892, Acts were passed providing for the appointment of Boards of Conciliation, to which application might be made voluntarily by the contending parties. The awards of the Boards had not any binding force. Boards were applied for on but few occasions, their lack of power to enforce awards rendering them useless for the settlement of disputes.

The first Australian Act whereby one party could be summoned before, and, presumably, made subject as in proceedings of an ordinary court of law to the order of a court, was the South Australian Act of 1894. Its principles have been largely followed in other States, but it proved abortive in operation and in many respects is superseded by the Wages Board system already described. Western Australia passed an Act in 1900—repealed and re-enacted with amendments in 1902—New South Wales followed in 1901. A bill introduced into the Tasmanian Parliament in 1903 was rejected by the Upper Chamber. The Commonwealth Act, passed in 1904, applies only to industrial disputes extending beyond the limits of a single State.

(iii.) *Industrial Unions.* The Arbitration Act, made to encourage a system of collective bargaining and to facilitate applications to the court, and to assure to the worker such benefits as may be derived from organisation, virtually creates the Industrial Union. This, except in New South Wales, is quite distinct from the trades union; it is not a voluntary association, but rather an organisation necessary for the administration of the law. Industrial unions (or "organisations," as they are styled in the Commonwealth Act) may be formed by employers or employés. They must be registered, and must file annual returns of membership and funds. Unions of employers must have a minimum number of employés. In New South Wales and Western Australia the minimum is fifty, under the Commonwealth Act 100. All unions of employés must possess the following qualifications:—In New South Wales the union must be a trade union or branch thereof, or be an association of unions; in Western Australia a membership of fifteen, and by the Commonwealth Act a membership of 100 is required. The union rules must contain provisions for the direction of business, and, in particular, for regulating the method of making applications or agreements authorised by the Acts. In Western Australia rules must be inserted prohibiting the election to the union of men who are not employers or workers in the trade, and the use of union funds for the support of strikes and lockouts; a rule must also be inserted requiring the unions to make use of the Act. *The Commonwealth Act forbids the employment of funds for political purposes.*

(iv.) *Industrial Agreements.* Employers and employés may settle disputes and conditions of labour by industrial agreements, which are registered and have the force of awards. They are enforceable against the parties and such other organisations and persons as signify their intention to be bound by an agreement.

Failing agreement, disputes are settled by reference to the court. This consists of a judge of the Supreme Court of the State, or, in the case of the Commonwealth, of the High Court. In the States, he is assisted by two "members," who are chosen by and are appointed to represent the employers and employés respectively. Technical assessors may be called in to sit with and to advise the court.

Cases are brought before the court either by employers or employés. The consent of a majority of a union voting at a specially summoned meeting is necessary to the institution of a case; the Commonwealth Act requires the certificate of the Registrar that it is a proper case for consideration.

The powers of the court are both numerous and varied; it hears and makes awards upon all matters concerning employers and employés. The breadth of its jurisdiction may be gathered from the Commonwealth definition of industrial matters. The definition includes the principal matters dealt with by the Acts in a concise form. "'Industrial matters' includes all matters relating to work, pay, wages, reward, hours, privileges, rights, or duties of employers or employés, or the mode, terms, and conditions of employment or non-employment; and in particular, without limiting the general scope of this definition, includes all matters pertaining to the relations of employers and employés, and the employment. preferential employment, dismissal or non-employment of any particular persons, or of persons of any particular sex or age, or being or not being members of any organisation, association, or body, and any claim arising under an industrial agreement."

(v.) *Powers of Court.* The court may fix and enforce penalties for breaches of awards, restrain contraventions of the Acts, declare any practice or regulation to be a "common rule" of the trade, and define the limits of its observation (the Commonwealth Court has power to mitigate the hardships of the common rule), to hear objections to it, and exercise all the usual powers of a court of law. In short, the Acts effect the creation of a system of jurisprudence, with appropriate artificial persons.

The court may prescribe a minimum rate of wage; it may also (except in Western Australia as regards employment) direct that preference of employment or service shall be given to members of unions. An opportunity is offered for objection to a preference order, and the court must be satisfied that preference is desired by a majority of the persons affected by the award who have interests in common with the applicants.

The Commonwealth Court is to bring about an amicable agreement, if possible, to conciliate and not to arbitrate, and such agreement may be made an award.

All parties represented are bound by the award, and also all parties within the ambit of a common rule or (in the case of Western Australia) giving adherence. The court possesses full powers for enforcement of awards.

In Western Australia there is also a system of Boards of Conciliation, consisting of representatives of employers and employés. They may make awards, which are binding if not challenged within a month after being filed. As a matter of fact, they are almost invariably appealed from, and the tendency is to go direct to the court.

The States have included their railway and tramway employés, and also the employés of certain other public bodies under the Acts; the section of the Commonwealth Act giving the Commonwealth Court power over State employés has been declared unconstitutional by the High Court.[1]

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[1] Federated Amalgamated Railway, etc., Employés *v.* N.S.W. Railway, etc., Employés (4 C.L.R. 488).

(vi.) *Miscellaneous.* The Commonwealth and Western Australian Acts absolutely forbid strikes and lockouts. The New South Wales Act specifically forbids them prior to or during the pendency of a case, leaving events after the award to be dealt with by the court. Protection is afforded to officers and members of unions against dismissal merely on account of such officership or membership, or on account of their being entitled to the benefit of an award.

It has been settled by the High Court that an Arbitration Court cannot direct—

(*a*) That non-unionists seeking employment shall, as a condition of obtaining it, agree to join a union within a specified time after engagement;

(*b*) That an employer requiring labour shall, *ceteris paribus*, notify the secretary of the employés' union of the labour required.[1]

4. The "New Protection."—The wide difference between the development in the several States of the Commonwealth of the regulation by State institutions of the remuneration and conditions of the workers, has given rise to a desire on the part of the Commonwealth Government to secure uniformity throughout Australia by any suitable and constitutional action on the part of the Commonwealth. In Victoria, Wages Boards, and in New South Wales and Western Australia, Arbitration Courts, have now existed for a considerable period of time, and have raised wages and improved the conditions of labour. The South Australian Wages Board system, however, has been in operation scarcely a year, while the Queensland Bill has been shelved, and Tasmania is without similar legislation. The result of this is that the workers of the three last-mentioned States regard themselves as not so well off as their fellows in the three first-mentioned States. The desirability of uniformity has, as already mentioned, been recognised by the New South Wales Arbitration Court, which (conversely to the last-mentioned cases) refused the Bootmakers' Union an award which would increase the wages of its members to amounts exceeding those paid in Victoria in the same trade, the express ground of the refusal being that New South Wales manufacturers would be handicapped by the payment of a higher rate of wage than prevailing in Victoria. This attitude cannot be made effective by the Arbitration Court of the Commonwealth, which has jurisdiction only over industrial disputes extending beyond the limits of any one State.

The opinion has been expressed that a manufacturer who benefits by the Commonwealth protective tariff should charge a reasonable price for the goods which he manufactures, and should institute a fair and reasonable rate of wage and condition of labour for his workmen.

The above view is known as the "New Protection," a phrase which, though novel, is already firmly established in Australian economic discussions; and the statutes referred to immediately hereinafter are the expression thereof.

By the Customs Tariff 1906, increased duties were imposed upon certain classes of agricultural machinery, notably the "stripper-harvester," a machine invented in Australia, which has, to a great extent, replaced the "reaper and binder and thrashing machine" in the harvesting of wheat. By the same Act it was enacted that the machines scheduled should not be sold at a higher cash price than was thereby fixed, and that if that price should be exceeded, the Commonwealth Executive should have power, by reducing the Customs duties imposed by the Act, to withdraw the tariff protection.

By the Excise Tariff Act 1906 (No. 16 of 1906), an excise of one-half the duty payable upon imported agricultural machinery was imposed upon similar machinery manufactured in Australia. But it was provided that the latter should be exempt from excise if the manufacturer thereof complied with the following condition, namely, that the goods be manufactured under conditions as to the remuneration of labour, which—

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[1] Trolly, etc., Union of Sydney and Suburbs v. Master Carriers' Association of New South Wales. (2 C.L.R. 509.)

(*a*) Are declared by resolution of both Houses of the Commonwealth Parliament to be fair and reasonable;

(*b*) Are in accordance with the terms of an industrial award under the Commonwealth Conciliation and Arbitration Act 1904;

(*c*) Are in accordance with the terms of an industrial agreement filed under the last-mentioned Act;

(*d*) Are, on an application made for the purpose to the President of the Court, declared to be fair and reasonable by him or by a judge of a State court or a State industrial authority to whom he may refer the matter.

By the Excise Tariff Act 1906 (No. 20 of 1906), excise duties are imposed in respect of spirits, and it is provided that if any distiller (i.) does not, after the Act has been passed a year, pay his employés a fair and reasonable rate of wages per week of forty-eight hours or (ii.) employs more than a due proportion of boys to men engaged in the industry, the Executive may on the advice of Parliament impose an additional duty of one shilling per gallon on spirits distilled by that distiller.

Exemptions have been claimed by the manufacturers of agricultural machinery in South Australia, New South Wales, Victoria, and Tasmania. These were granted in the two first-mentioned States in consequence of an agreement entered into between the employers and employés. In Victoria, "this whole controversial problem with its grave social and economic bearings" (to quote the words of the President of the Court) was discussed in a lengthy case upon the application for exemption by Victorian manufacturers, now widely known as the "Harvester Case," and in the report of that case may be found the legal interpretation of the Acts under consideration. The exemptions claimed were refused, and the court after discussing the meaning of the words "fair and reasonable" defined them by laying down what it considered to be a scale of fair and reasonable wages. It is sufficient to point out how new a departure the Acts described are in modern industrial legislation.

It is now proposed by the Commonwealth Ministry to apply a similar system to all manufactures affected by the Commonwealth Customs tariff. The methods proposed to be adopted have been set forth in a memorandum recently circulated by the Prime Minister of the Commonwealth. In the absence of actual legislation upon the subject it does not seem desirable to describe tentative proposals which have not yet been circulated even in the form of a Bill. It may be remarked that the question of the constitutionality of the "New Protection" has been challenged.

The Bounties Act 1906 makes provision for the encouragement of certain Australian industries by the payment to producers of certain moneys allotted by the Act upon the production of the commodities specified. This Act also provides for the refusal or reduction of a bounty, if the production of a commodity is not accompanied by the payment to the workers employed in that production of a fair and reasonable rate of wage.

§ 4. Operation of the Wage-regulating Laws.

1. **System of Wages Boards.**—Wages Boards are appointed upon the application of either employers or employés. The grounds usually alleged by the former are that their business is hampered by "unfair" competitors, who pay only a sweating wage; by the latter, that they are sweated or are entitled to a consideration of their wages, by reason of the prosperity of the trade in which they are engaged.

2. **Wages Boards.**—There were at the end of 1906 forty-nine special Boards in existence in Victoria and in South Australia. Some of the Victorian Boards, however, of then recent

appointment, had not made any determination. The following table shews the position of trades in relation to the Boards:—

WAGES BOARDS, 1906.

Total Number of Distinct Trades carried on in Registered Factories.		Total Trades under Boards.	Total Factories Regist'r'd	Total Factories under Wages Boards.	Total Employés	Total Empl'yés under Wages Boards.	Percentage under Boards.	Number of Determinations.
Victoria ...	149	49	4,766	3,425	67,545	49,500	73%	42
S. Australia	63	8	1,578	312	19,511	3,574	18%	8

The following table shews the number of convictions for disobedience to determinations of Boards (not including overtime working):—

VICTORIA.

1901.	1902.	1903.	1904.	1905.	1906.
34	33	41	39	27	52

There has only been one serious strike in the trades under the system since its inception in Victoria. The increased prosperity of that State naturally brings demand for increased wages, and these demands have met with no more friction than is necessarily attendant on such re-adjustments.

In 1906 the exemptions granted in Victoria to old and infirm workers were 413, and to slow workers 88. One exemption was granted to a slow worker in South Australia. The Court of Appeal in Victoria has heard four appeals from determinations of Boards. In one case the decision was upheld, in three cases decisions were reversed or amended. In one Victorian case the Board was unable to come to a determination and the matter was referred to the Court, which exercised the power of fixing a proper wage where the average wage paid by employers did not afford a living wage.

3. **Effect of Acts.**—The question whether the operation of the Acts has bettered the monetary position of the operative may be answered in the affirmative. Starting from the lowest point, the provision of an absolute minimum wage per week has stopped one form of gross sweating. Another case is that of the "white-workers" and dressmakers; with these the lowest grade was the "outworkers," who were pieceworkers. In some branches of the Victorian trade, in 1897, the wages paid to outworkers for all classes of certain goods were only from one-third to one-half the wages paid in the factories for low-class production of the same line of stuff. By working very long hours the outworker could earn ten shillings per week. The average wage of females in the clothing trade in 1897 was ten shillings and tenpence per week; there were, however, in that year 4164 females receiving less than one pound per week, and their average was eight shillings and eightpence. It was almost a revolution when a minimum wage of sixteen shillings per week of forty-eight hours was fixed by the Board, when pieceworkers' rates were fixed to ensure a similar minimum, and when outworkers were placed on the level of pieceworkers. Many employers refused to continue to give out work and took the workers into the factories on time work. The sanitary conditions required were far more healthy than could exist in the poorer class of dwellings. The evidence of South Australian reports discloses similar facts in that State.

4. **Change of Rate of Wage.**—The following table shews the change of affairs in these trades:—

WAGES OF FEMALES IN CLOTHING TRADES, 1897 AND 1906.

Year.	Class.	Females Employed in the Dress, Mantle, and Underclothing Trade.		Females Employed in the Shirt Trade.	
		Number	Average Wage.	Number.	Average Wage.
			£ s. d.		£ s. d.
1897	16 yrs. and over receiving under £1 per wk.	4,164	0 8 8	435	0 12 3
	„ „ £1 and over ...	593	1 9 1	144	1 8 10

	Females Employed in ...	Dress and Mantle Trade.		Shirt Trade.		Underclothing Trade.	
		Number.	Average Wage.	Number.	Average Wage.	Number.	Average Wage.
			£ s. d.		s. d.		s. d.
1906	Females at minimum wage and over ...	2,383	1 1 4	241	19 11	542	19 8
	Pieceworkers	259	0 16 0	763	15 8	231	16 8

The above trade, the sweating in which is world-wide, is taken as an example, and the same results may be obtained in any State, according as there is or is not a regulative law. In Tasmania, where no such law exists, the scale of wages may be gathered from the fact that in clothing factories females of three and five years' service, and of twenty to twenty-six years of age, receive twelve shillings per week.

It may be stated generally that some of the most prosperous trades in Victoria, e.g., the boot trade, have been longest under the Acts.

§ 5. Operation of the Arbitration Acts.

1. **New South Wales and Western Australia.**—The impetus given to organisation of employers and employés by the Acts may be gathered from the table already given. In New South Wales sixty-five agreements have been registered, most of which continue in force and affect over 1000 employers and nearly 30,000 employés. In Western Australia thirty-four agreements have been registered. The courts have been kept extremely busy. In New South Wales, up to the end of 1906, 170 industrial disputes have been filed, sixty-nine awards have been made, and the balance of the disputes were settled, withdrawn, or, for some other reason, removed from the list. The court has also heard several hundred minor matters arising out of the Act or industrial questions. The "Common Rule"[1] power has been largely availed of; 140 cases for breaches of awards have been filed in New South Wales. In Western Australia 247 and four disputes have been before the court. The attached tables shew the effect of the awards upon the rate of wage. There have been a certain number of labour troubles in New South Wales since the passing of the Act, and between thirty and forty instances of cessations of work have been reported. One "strike" conviction has been obtained. In the majority of instances the strikes were by small bodies of men and were usually soon settled.

§ 6. Other Commonwealth Legislation affecting Labour.

1. **Constitutional Power.**—By sec. 51 of the Commonwealth of Australia Constitution Act power is conferred upon the Parliament of the Commonwealth to make laws respecting, *inter alia*—

(xix.) Naturalisation and aliens.
(xxiii.) Invalid and old-age pensions.
(xxvii.) Immigration and emigration.
(xxxv.) Conciliation and arbitration for the prevention and settlement of industrial disputes extending beyond the limits of any one State.

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[1] See § 3, 3 (v.) of this section.

2. **Legislation.**—(i.) Sub-section xxiii., relating to *old-age pensions*, etc., has not been, as yet, acted upon.

(ii.) One of the first Acts of the Commonwealth was the *Pacific Island Labourers Act 1901*, which prohibited the importation of further Kanaka labour for sugar plantations and provided for the deportation of those already in the State.

(iii.) *The Immigration Restriction Acts 1901 and 1905* prohibit the immigration of any persons who are unable to comply with certain educational conditions. The effect of this Act is to exclude Asiatic and other coloured peoples from Australia.

(iv.) *The Contract Immigrants Act 1905* defines a contract immigrant as an immigrant to Australia under a contract or agreement to perform manual labour in Australia. The contract must be in writing and must be made by or on behalf of a resident in Australia. Its terms must be approved by the Minister of External Affairs before the admission of the immigrant. It must not be made in contemplation of, or with a view of affecting an industrial dispute. The Minister must be satisfied that there exists a difficulty of obtaining a worker of equal skill and ability in the Commonwealth, but this last provision does not apply to contract immigrants who are British subjects either born in the United Kingdom or descended from persons there born. The terms of the contract must offer to the immigrant advantages equal to those of local workers. Domestic servants and personal attendants accompanying their employers to Australia are excluded from the operation of the Act. Contract immigrants not complying with the above conditions are excluded from Australia.

During the year 1907, 972 contract immigrants were admitted into the Commonwealth, of these 731 were British, 107 were Spaniards, 80 Scandinavians, 41 Austrians, and 13 Germans. Out of this total 912 were agricultural labourers introduced for the Queensland sugar industry, viz., 571 by the Queensland Government, and 341 by the Colonial Sugar Refining Company. The labourers for the sugar plantations included all the Spaniards, Scandinavians, and Austrians, and 684 out of 731 British. The remaining 47 British and the 13 Germans were required for various industries.

(v.) *The Sugar Bounty Act 1903* makes the payment of the bounty contingent on all work being done by white labour.

(vi.) *The Trade Marks Act 1905* provides for the registration of marks by any individual Australian worker or association of Australian workers for the purpose of indicating that the articles to which it is applied are the exclusive production of the worker or of members of the association, with penalties for the infringement of such a mark. The mark may be applied to work which is partially manufactured by an association, provided that the non-association proportion be distinguished; and it is to be attached only by the producing employer or, with his authority, by a worker or member of the association.

This provision is an adaptation of the "union label," which is of American origin, and is legalised in a large number of the States of the United States of America. It will be observed that the word "association" is used instead of "union." Another feature which distinguishes the Australian from the American "union label" is that the label is in Australia affixed by the employer, and not by a union, while in America the case is reversed. While there is nothing on the face of the Act to connect "association" with "trade union," and while the label might well be used by any co-operative association whose members work jointly for themselves and not for an employer, yet the word "association" is, for practical purposes, synonymous with "trade union," and was, indeed, substituted for the latter, during the course of the Bill through Parliament.

One mark only has been registered by a co-operative brewing company in Sydney. Otherwise the provisions cited are in abeyance.[1]

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[1] A considerable amount of information concerning the origin, history, and uses of the "union label" is given in the Bulletin of the Department of Labour (U.S.A.) for 1898, p. 207.

SECTION XXVIII.

DEFENCE.

§ 1. Military Defence.

1. **Historical Outline.**—(i.) *Introductory.* For many years after the establishment of colonies in Australia, there was no military training of the general body of citizens, nor even of a selection from out that body, as is the case to-day. Military needs up to 1870, viz., for fifteen years after the grant of responsible government, were met by detachments of Imperial troops. Colonists, however, had not left out of consideration the need for an efficient system of self-defence, and the early establishment of volunteer forces in times of emergency and stress, have now found fruition under the Commonwealth, since the aim of Australians is to make the continent self-contained in the matter of defence.

(ii.) *New South Wales.* Until the year 1870, the main defence of Australia consisted of the garrisons of British troops quartered in the leading cities. In the convict days, the Imperial soldiery was maintained principally as a convict guard, and for policing the penal settlements. In 1801 a corps of volunteers, designated the "Loyal Association," was formed, in response to an invitation from the Governor, from among the settlers and the civil officials, to meet any French attack upon the colonies, the possibility of which was suggested by the frequent rumours of war between France and England. The members of the association were generally victualled at the public cost.

In 1803, the strength of the New South Wales corps being then 569 of all ranks, news reached the colony that war had been declared. The Governor summoned the inhabitants to a muster, and a defence corps, for service in case of invasion, was raised.

The period of the Napoleonic wars was one of alertness in the colony, but with the cessation of hostilities, the active service of the volunteers seems to have come to an end. In 1854, the year of the Russian war, a volunteer force was enrolled in Sydney, under the authority of the Act 18 Vic. No. 8. This corps consisted originally of one troop of cavalry, one battery of artillery, and six companies of foot, called the 1st Regiment of New South Wales Rifles; but with the termination of the Crimean war, the volunteers practically ceased to exist. A second force was enrolled in 1860, consisting of one troop of mounted rifles, three batteries of artillery, and twenty companies of infantry, with a total strength of 1700. In 1862 the Mounted Rifles gave place to more artillery. In 1868 the military force was reorganised under the Volunteer Regulation Act of 1867, a grant of 50 acres of land being given for five years' efficient service. Under this enactment a large force was maintained. 1870 saw the withdrawal of the Imperial troops. "Regular" troops were not immediately raised, and for some months the responsibility for home defence rested upon the volunteers. In 1870 a regular defence force was enrolled, comprising one battery of artillery and two companies of infantry. In the following year the latter were disbanded. In 1874 the land orders for volunteers were abolished, and a direct system of "partial payment" introduced. In 1876 the "permanent" artillery was strengthened by a second battery, and in the following year by a third. 1877 saw the augmentation of the Engineers' Corps, established as a "volunteer" body 10 years earlier, by a torpedo and signalling corps; in 1890 a second field company was added. In 1878 a further reorganisation of the volunteers took place. In 1881 the Commissariat and Transport Corps was raised, designated Army Service Corps later. The Act of 1867, as amended in 1878, continued in force till the transfer of the troops to the Commonwealth. A corps of naval artillery volunteers was raised in 1882, and was followed a few years later by numerous bodies of military reserves, of all the principal arms; but all these "volunteers" were gradually disbanded, or merged in the "partially-paid" forces.

The cavalry regiment, known as the N.S.W. Lancers, was first raised in 1885 as a volunteer reserve corps, under the name of the Light Horse; but in 1888 the men were merged in the "partially-paid" troops, under their present designation. They provided their own horses and equipment—uniform and arms being supplied by the Government. Unlike the Lancers, the Mounted Rifles were directly enrolled in 1889 as a "partially-paid" body, and were strengthened by the inclusion of a large part of the Light Horse. An unpaid reserve of four batteries of field and garrison artillery was raised in 1885, but two of these were disbanded in 1892, and the others merged in the "partially-paid" force forming a second field battery. Unpaid infantry reserves were also raised in 1885. These were gradually weakened, and many of the men were formed into reserve rifle companies, the remainder in 1892 being absorbed by the 1st, 2nd, 3rd and 4th regiments, whose establishments were at the same time raised from eight to ten companies. At the end of the same year the rifle companies were disbanded, and civilian rifle clubs formed.

The "permanent" force was extended in 1888 to include corps of submarine miners and mounted infantry; but the latter ceased to exist in 1890, and a fourth battery was added to the artillery, while in the following year a "permanent" medical staff corps evolved out of the "volunteer" army medical corps, which had been raised in 1888.

In 1892 the "partially-paid" infantry absorbed many members of the older infantry reserves. Two years later, it was further strengthened by the absorption of the senior cadets from the public schools. Improvement in organisation and administration were further developed in 1895-6, by the addition of an Army Service Corps and Ordnance Store Corps and a Veterinary department to the establishments, and by the elaboration of arrangements necessary to mobilisation for war.

"Volunteers" were again instituted in 1895. The Scottish Rifles, followed by the Irish, the St. George's, and the Australian Rifles, were raised. In 1897 the First Australian Volunteer Horse and the Railway Volunteer Corps were added, as also was a "National Guard," consisting of old volunteers and men who had seen service. In 1899 the Defence Force Rifle Association was incorporated under regulations approved by the Government. In the same year the Railway Corps was disbanded, and in 1900 the Australian Horse came under the "partially-paid" system. The volunteer forces were strengthened during that year by the addition of the Canterbury Mounted Rifles, Civil Service Corps, and Drummoyne Volunteer Company. The Army Nursing Service Reserve was also established in connection with the Army Medical Corps. It consisted of 26 nursing sisters possessing the highest nursing qualifications and training.

The actual strength of the military forces of New South Wales on 31st December, 1900, was 505 officers and 8833 men, made up as shewn in table hereinafter.

In addition, there were on the same date a reserve with 130 officers and 1908 of other ranks, and civilian rifle clubs with 1906 members.

(iii.) *Victoria.* Soon after separation from New South Wales the war between Russia and the allied forces of England, France, and Turkey led to the formation, in 1854, under the authority of an Act for volunteer corps in Victoria (18 Vict., No. 7) of the Melbourne Volunteer Rifle Regiment, later known as the Victorian Volunteer Artillery Regiment, with an establishment of 2000 men. In 1860 the volunteers in the colony took over the garrison duties of the Imperial troops, who were ordered to New Zealand, the actual strength in the year named being 4002. Reorganisation was effected in 1863, and two years later the Volunteer Act (28 Vict., No. 266) authorised the raising of a force comprising various arms of the service. On the withdrawal of the detachment of Imperial troops formerly stationed in the colony, the Discipline Act 1870

(34 Vict., No. 389) was enacted, instituting a paid artillery corps. If otherwise eligible, the men of this corps were drafted into the Police and Penal Departments as vacancies arose. In the first four years of the system 190 artillerymen were transferred to the civil branch. From the establishment of the "permanent" force the whole expenditure on military services has been borne by the State.

The "volunteer" force, as originally constituted, comprised cavalry, artillery, engineers, and infantry, with a torpedo and signal corps. At the end of 1871 the "permanent" artillery numbered 119 of all ranks, one only holding a commission. The volunteers and naval brigade consisted of 136 officers and 3663 other ranks, a total of 3799.

The years ensuing saw steady development in military matters. The permanent forces were at all times kept in a high state of efficiency, and the volunteers strove to emulate them in matters of training and discipline. The establishment of both the professional and civil soldiery was gradually increased. Buildings and fortifications were constructed and maintained, garrison and field guns and guns of position were purchased and made available, and the dismounted services were armed with rifles.

In 1876 effect was given to many of the recommendations of a Royal Commission appointed in 1875. Sea and coast defence began to be undertaken, and regular drills and camps of exercise for all arms were instituted shortly afterwards. In the year named the strength of the forces was 3736 of all ranks, including 136 permanent artillery.

Still greater changes in the system of Victorian defence were made in 1883 and 1884. The volunteer force was disbanded, and corps of paid "militia" were raised in lieu and enrolled under the Discipline Act 1883 (47 Vict., No. 777), which came into operation on 3rd December of that year. A large number of the volunteers were drafted into the paid militia, and granted continuity of service. A Ministry of Defence was constituted and a Council of Defence created, a special appropriation of £110,000 a year for five years being made. Officers from the active list of the Imperial navy and army were engaged for terms of service in the colonial forces to carry out the necessary discipline and instruction. The naval force was also considerably augmented. In 1887 the strength was 4189 of all ranks, including 268 permanent soldiers.

In 1890 the laws relating to defences and discipline were consolidated under the Defences and Discipline Act 1890 (54 Vict., No. 1083). This Act formed the principal law under which the forces were maintained until the enactment of the Defence Act 1903 by the Federal Parliament. A further appropriation of £145,000 was, on the expiration of the previous one, provided for naval and military purposes for two and a-half years, viz., from 1st July, 1899, to 31st December, 1901. The engaging of officers from the Imperial navy and army for terms of service was continued. Colonial officers were sent to England for special courses of instruction, and a scheme was arranged, with the consent of the Home authorities, for sending selected officers of both arms of the defence force for courses of instruction in the Imperial service. The Admiralty gave permission for officers of the colonial navy to serve on board H.M. ships on the station, granting acting commissions so as to enable them to undertake responsible duties. The total defence establishment for 1891-2, fixed at 7360, was reduced in 1895 to 4901, but again increased in 1899 to 5885.

Rifle clubs were established in 1883 for the encouragement of rifle practice. Members were allowed to obtain rifles and ammunition at reduced rates, and were given free railway travelling for rifle practice and matches. Shortly after inauguration the clubs were divided into six districts, and members in each district were required to meet once a quarter for practice in field firing. An annual allowance was made to the clubs for each effective marksman, the money being devoted to the maintenance of ranges and purchase of ammunition.

The regiment of Mounted Rifles was established in all the districts of Victoria. To cover the cost of uniform, and for incidental expenses, an effective and capitation allowance was made, and a small payment was granted by way of compensation for attendance at the annual camps of training; otherwise the corps was a "volunteer" one. Certain articles of equipment were furnished by the Government, recruits on being passed into the ranks getting rifles, accoutrements, and horse-gear (except saddle) free. A minimum of twelve daylight drills annually, and a course of musketry, was prescribed for all members, and engagement was for three years with privilege of re-engagement.

An infantry volunteer regiment (the Victorian Rangers) was also raised in extra-metropolitan places. Effective and capitation allowance, and compensation for loss of time by reason of attendance at camp, were granted also to the Rangers.

The outcome of the encouragement of drill and rifle shooting in the schools was the formation, in the year 1884, of Cadet Corps. These were authorised in any school in detachments of not less than twenty. The Government supplied rifles (principally Francotte breech-loaders) and provided ammunition at reduced rates. Corps were raised in all districts in the larger schools. Instructors of the militia and volunteers were permitted, in their spare time, to drill the cadets, payment of 2s. 6d. being allowed for each parade. Annual camps, largely attended, were held generally in the spring. In Melbourne, and in the principal inland towns, classes for instruction of cadet officers were conducted, which were regularly availed of by masters and teachers.

To form a link between the school cadets and the militia a battalion of Senior Cadets was established, and consisted chiefly of boys who had left school and engaged in regular occupations in life. All the work was voluntary, and arms and accoutrements were supplied by the Government. An effective allowance was made to assist the boys in the purchase of clothing,

The depression and consequent retrenchment in the last decade of the nineteenth century seriously affected the Defence Department, but efficiency was never sacrificed.

The strength of the Victorian Defence Force on the eve of federation was as follows:—Officers, 301; other ranks, 6034; the details being as shewn in table hereinafter.

(iv.) *Queensland.* Steps were almost immediately taken, upon the separation of the Colony of Queensland from New South Wales in 1859, to provide for defence. A troop of mounted rifles was raised in March, 1860. The service was voluntary and the force quickly increased, infantry and cavalry, subsequently supplemented by artillery, being formed of "volunteers." Grants for efficiency and a capitation allowance, with free issue of ammunition, were obtained from the Government; and orders granting fifty acres of land were available upon completion of five consecutive years of service. In 1876 the total strength was 415. The Volunteer Act of 1878 provided for the raising of a force for defence, and many citizens entered upon useful and regular training. In 1880 the total strength was 1219 of all ranks.

But the volunteer system here, as elsewhere in Australia, was superseded. In 1883 a Military Committee of Inquiry, appointed to consider the basis of service, reported against the system as lacking in cohesion and discipline, and in 1884 the Volunteer Act was repealed. All male inhabitants within specified ages, and with certain exceptions, were liable to serve. A small permanent corps was authorised, and the formation of partially-paid militia and volunteer corps was provided for, Under the new system the force was greatly augmented, and a higher degree of efficiency was reached. Subsequent legislation crystallised the defence system of the colony. The total strength on 31st December, 1900, was 4028, made up as shewn in table hereinafter.

(v.) *South Australia.* The first attempt at military organisation in Adelaide dates back to 1854, when a Militia Act authorised the Governor to call out a force of 2000 men between 16 and 46 years of age. The power, however, was not exercised. The Acts of 1859 and 1860 provided for the establishment of volunteer forces, but in 1865 all previous Acts were repealed; and under a new enactment the calling out of not fewer than 540 and not more than 1000 men was authorised, with pay at the rate of 5/- a day. In 1867 the artillery were given a slightly higher rate. In 1877 the possibility of war with Russia acted as a stimulus in defence matters; 1000 men were raised under the existing legislation, and Imperial officers and drill instructors were obtained from England for purposes of instruction, discipline, and organisation.

A National Rifle Association was inaugurated in the following year, and rifle companies were formed. An Act of the year authorised the formation of a small "permanent" force, but it was only in 1882, under an amendment of the Act of 1878, that such force, consisting of one officer and 20 men, was raised. Three years after its formation the numbers were augmented.

In 1881-2, Acts were passed which allowed the paid volunteers to be raised to a maximum of 1500, and authorised a reserve without limit of numbers. In 1882 the force numbered 1880—1680 infantry and 200 artillery.

In 1886, by further legislation, the paid volunteers were styled "militia," the rifle companies became the "volunteer" force, and a militia reserve was also provided for. At the end of 1889 the strength of the "permanent," "militia," and "volunteer" force was 2720 of all ranks. Minor alterations were made in 1890 and 1895.

The strength on 31st December, 1900, was—officers of active and reserve forces, 135; other ranks, 2797, made up as shewn in table hereinafter.

(vi.) *Western Australia.* The first "volunteer" force in Western Australia was raised in 1861, under Local Ordinance 25 Vic., No. 3. By the Volunteer Force Regulation Act 1883, the local forces were placed under the military law of Great Britain in time of war, but with certain reservations. In 1889 the "volunteer" force numbered 603 of all ranks. In 1890 an increase in establishment to 712 was made. It consisted then of eight corps, of which two were field artillery and six were infantry. Attached to two of the infantry corps were 60 mounted infantrymen. For each efficient volunteer, a capitation grant of £1 10s. per annum was made. To attain efficiency, a volunteer had to attend 12 parades in the year, and complete a musketry course.

Other "volunteer" corps were formed under the provisions of an Act of 1894, and a small unit of "permanent" artillery was added. The "partially-paid" system was introduced in 1896-7. Cadet corps were formed at Perth and Fremantle, and the establishment of the Perth and Fremantle batteries were substantially increased.

Shortly before Federation, a "volunteer" reserve force was formed of persons who had served in the Imperial army, navy, or auxiliary force, or in the military forces of a colony. Six drills a year were required of each member, and an annual allowance of 10s. was made. Membership was restricted to persons under 60 years of age.

The strength of the Western Australian forces on 31st December, 1900, was—135 officers and 2561 other ranks, the details being as shewn in table hereinafter.

(vii.) *Tasmania.* Leaving out of consideration the presence of British military detachments during the early days of Tasmania, no really military local force was organised till 1859, when two batteries of "volunteer" artillery, and twelve companies of "volunteer" infantry were raised. In 1867 the infantry companies were disbanded, and the artillery increased by one battery.

The withdrawal of the Imperial force in 1870, and the simultaneous withdrawal of the volunteer vote, left the colony totally destitute of defence. It was not till 1878 that a remedy was applied, another "volunteer" force being enrolled in that year. In 1882 the strength of this force was 634 of all ranks.

Active forces, of a strength not exceeding 1200 in time of peace, were authorised under an Act of 1885, the services of existing volunteer corps being retained.

Eight years later, an additional "auxiliary" force of a total peace strength of 1500 was authorised.

At the end of 1896 the total strength of the Tasmanian force was 1399, of whom 966 belonged to the "auxiliary" force, and about 200 to the Tasmanian and Launceston Rifle Regiments.

Consolidation of these three units was effected in 1898, the new corps consisting of three battalions, forming the Tasmanian Infantry Regiment.

The strength on 31st December, 1900, was—113 officers and 1911 of other ranks, made up as shewn in table hereinafter.

(viii.) *Defence Works and Fortifications.* Fortifications have been erected for the defence of the principal coast cities of the States, and, in the case particularly of Sydney and Melbourne, heavy armaments have been erected at the port entrances and other points of vantage. It is difficult to determine the total cost of defence works. Large sums have been spent out of loans in each State except Western Australia, but from 1872 to 1899 Victoria did not expend loan moneys on defence construction.

(ix.) *Fortification of Strategic Points.* For some time prior to 1890 the necessity of fortifying certain points on the Australian coast, at the joint expense of the colonies, was considered. Important trade routes are commanded by Albany, on King George's Sound, in Western Australia, and by Thursday Island, in Torres Strait. Hobart and Port Darwin were also regarded as strategic ports which should be fortified. As the result of a military commission, appointed by the Imperial and the different Australian Governments, which visited the places named, defences were erected at King George's Sound, one-fourth of the cost being borne by Western Australia, the remaining three-fourths by New South Wales, Victoria, Queensland, and South Australia, on a population basis. Equipment was supplied by the Imperial Government, and Western Australia provided the garrison and exercised general superintendence. Fortifications at Thursday Island were also erected, New South Wales, Victoria, Queensland, and Western Australia contributing to the cost of maintenance according to their respective populations. Owing to the formation of a harbour at Fremantle, the Imperial authorities now consider it should be the only fortified port in Western Australia. The whole question of fortification and re-armament is being considered by the Commonwealth Government.

(x.) *Summary.* The earliest settlements in Australia were made by British officers in charge of transported convicts, in the oversight of whom they were assisted by detachments of Imperial troops. The forces who were sent from the centre of Government to maintain order and discipline in the outlying parts of the Empire, were either specially raised and enlisted for the purpose, as in the case of the New South Wales corps, or were sent to their colonial destinations in the ordinary routine of their military service. Prior to the withdrawal of the last British troops from Australia, attempts had been made to organise local forces on a volunteer basis. In 1854 an effort was made which evinced considerable determination on the part of the colonists—engendered, evidently, by the fear of aggression likely to result from the Russian war. But the cessation of hostilities removed the cause for anxiety, and the volunteer movement seems to have passed into abeyance. Even in these early years, however, the need for a Federal system of defence was recognised by the thinking men of the community, and at last the federation of the Australian States—with its eminent advantages for effective defence—was consummated. In the sixties the Continental wars kept before statesmen the need of preparation for war, and the fact that in Australia the position of affairs was neither unobserved nor misunderstood is shewn by the raising—this time on a more lasting basis—of a volunteer force. Again, too, there was a determined effort to federalise defence, culminating in the proposals of 1870. In the year named, the Franco-German war, and the withdrawal of the last Imperial regiment from Australia, resulted in a definite basis for colonial defence being settled. Small detachments of permanent soldiery were instituted, to act generally as a nucleus about which the citizen soldiery should be shaped, and, generally, to look after the forts and defence works, which had then begun to be erected. The volunteer movement was enthusiastically taken up; many loyal colonists devoted their leisure to drill and training. No payment was made for loss of time, but arms and accoutrements, and sometimes uniforms, were furnished by Government. Reward for five years' service frequently took the shape of grants of land. In 1877 the possibility of another Russian war gave a stimulus to the movement, and establishments were increased. A few years later, as the result of rumours of war, consequent upon French activity in the New Hebrides, and of the reports of highly-qualified military experts who were specially employed to report on the condition of the defences, the "volunteer system" was abandoned, and the "militia," or "partially-paid" forces were brought into existence. The move towards federation is again noticeable, a very important convention being held in 1881. It was held that the "volunteer" system had failed. While many zealous men gave their whole energies to their training, some joined apparently without serious motive, and consequently failed to acquire those essential ideas of discipline necessary no less in citizen than in professional soldiery. Citizen forces were not thereby doomed, however, for the provision of a small annual allowance —generally £10 or £12 for the gunner or private, with a sliding scale for higher ranks— together with arms, accoutrements, ammunition, and all military necessities, free, enabled the "militia" system to be inaugurated, and as it was begun, so practically it has remained to the present day. Reductions in the above rates of pay were found to be necessary, and the lower rates have been continued under the Federal Government. "Volunteer" corps have again been raised, and the "permanent" forces have been continued in the Public Service.

(xi.) *Strength of States' Defence Forces immediately prior to Federation.* The establishment and strength of the military forces of the several States on 31st December, 1900, immediately prior to federation, was as follows, cadets, reservists, and rifle club members being excluded :—

ESTABLISHMENT AND STRENGTH OF MILITARY FORCES OF STATES, 31ST DECEMBER, 1900.

State.	Establishment.		Strength.	
	Officers.	Other Ranks.	Officers.	Other Ranks.
New South Wales	549	9,295	505	8,833
Victoria	394	6,050	301	6,034
Queensland	310	5,035	291	3,737
South Australia	141	2,847	135	2,797
Western Australia	140	2,558	135	2,561
Tasmania	131	2,605	113	1,911
Commonwealth ...	1,665	28,385	1,480	25,873

The strength of the various arms is shewn in the following table, permanent being distinguished from "militia," or "partially-paid," and "volunteers" :—

STRENGTH OF THE VARIOUS ARMS, 31ST DECEMBER, 1900.

Arms.	N.S.W.		Victoria.		Q'land.		S. Aust.		W. Aust.		Tas.		TOTAL.	
	Officers.	Other Ranks.	Officers.	Other Ranks.	Officers.	Other Ranks.	Officers.	Other Ranks.	Officers.	Other Ranks.	Officers.	Other Ranks.	Officers.	Other Ranks.
Permanent—														
Staff	19	98	14	58	15	57	14	5	2	8	3	9	67	235
Field and Garrison Artillery... ...	18	429	12	272	7	214	1	23	2	31	—	15	40	984
Engineers and other units	5	70	1	32	—	—	—	—	2	2	—	—	8	104
Militia and Volunteer—														
Cavalry and Mounted Rifles	88	1,695	52	1,033	53	741	33	621	32	799	5	91	263	4,980
Field Artillery ...	10	121	14	277	13	138	4	101	12	174	—	—	53	811
Garrison Artillery ...	27	441	37	901	17	212	9	165	2	66	13	197	105	1,982
Infantry	242	5,382	136	3,193	145	2,189	58	1,786	71	1,451	83	1,549	735	15,550
Engineers and other units	96	597	35	268	41	186	16	96	12	30	9	50	209	1,227
	505	8,833	301	6,034	291	3,737	135	2,797	135	2,561	113	1,911	1,480	25,873

2. **Land Defence of Federated Australia.**—(i.) *Assumption of Control by Commonwealth.* The Commonwealth of Australia Constitution Act of 1900 empowered the Commonwealth to legislate with respect to "the naval and military defence of the "Commonwealth and of the several States, and the control of the forces to execute and "maintain the laws of the Commonwealth," and vested the command-in-chief of the Commonwealth forces in the Governor-General, authorising him to proclaim a date, after the establishment of the Commonwealth, for the transference of the Defence Department from each State. This transfer was effected in March, 1901, when the State Ministry for Defence, one of the seven departments of the Executive Council of the federation, took over the control of the whole of the forces of the States.

(ii.) *The System of Administration.* Up to 12th January, 1905, the administration of the Commonwealth military forces was by means of a general officer commanding and a headquarters staff. On the date named, a Council of Defence, to deal with questions of policy, and a Military Board, to supervise the administration of the forces, were constituted. The main objects aimed at under the new system are (1) to establish continuity in defence policy; (2) to maintain a continuous connection between parliamentary responsibility and the control and development of the defence forces, the Minister being in constant and effective touch with his department; (3) to establish continuity of administrative methods by the creation of a continuous board; (4) the separation of administration from executive command, so as to develop the independence of district commands, and by giving scope to independent thought and initiative, make practicable a larger measure of decentralisation, and, more particularly, to make possible the ultimate development of a citizen force; (5) to maintain, on a uniform basis, the efficiency of the forces, by continuous and searching inspection by, and independent report from, an officer who, as Inspector-General, is appointed to report upon the results of the administration of the forces, the efficiency of the troops, the system of training, the equipment, the preparedness for war, and the state and condition of all defence works.

The military system of the Commonwealth is made up of—

(*a*) Permanent Forces which include
    Administrative and Instructional Staff.
    The Royal Australian Artillery Regiment.
    Small detachments of—
        Royal Australian Engineers.
        Australian Army Medical Corps.
        Australian Army Service Corps.
(*b*) Citizen Forces, comprising
    Militia Forces of all arms.
    Volunteer Forces (infantry).
    Reserve Forces.

The Royal Australian Artillery Regiment practically provides the garrison for certain naval strategic positions and other defended ports, and maintains the forts, guns, stores, and equipment in connection therewith. The other permanent detachments are to form a nucleus, each in its own arm, for instruction and administration of the citizen forces.

The forces of the Commonwealth are organised into—

(*a*) Field Force.
(*b*) Garrison Troops.

The field force consists of five Light Horse brigades, two infantry brigades, and four mixed brigades, and its duties are to undertake the defence of the Commonwealth as a whole, and to act as reserve to the garrison troops. The garrison troops find the necessary garrisons for the defended ports.

The reserves consist of (*a*) officers who, having passed through a certain period or course of training, have retired from active service, and *b*) members of rifle clubs, attested under the Defence Acts. Rifle club members are required each year to fire a prescribed musketry course, a capitation allowance being paid to clubs for each member classed as efficient. Rifle clubs would furnish a means of bringing the active forces up to war strength in time of national emergency.

(iii.) *The Military Forces under the Federation.* The position of the military forces under the Commonwealth is shewn in the following table:—

STRENGTH OF MILITARY FORCES, 1901 TO 1907.

	1901. [1] 1/3/01.	1902. 1/8/02.	1903. 30/6/03.	1904. 30/6/04.	1905. 30/6/05.	1906. 30/6/06.	1907. 30/6/07.
Commonwealth Headquarters	...	26	25	26	23	21	21
New South Wales	9,772	9,350	8,190	7,285	7,450	7,641	7,501
Victoria	7,011	6,771	6,070	5,734	5,858	6,146	6,235
Queensland	4,310	3,199	2,889	2,830	2,877	3,011	2,979
South Australia	2,956	2,214	1,911	1,699	1,842	1,962	1,888
Western Australia	2,283	1,845	1,469	1,254	1,235	1,522	1,625
Tasmania	2,554	2,199	1,850	1,052	1,214	1,645	1,662
Commonwealth	28,886	25,604	22,404	19,880	20,499	21,948	21,911

[1] Date of Commonwealth taking over the military forces from States.

(iv.) *Strength of the Various Arms.* The numbers of the different arms of the service on 30th June, 1907, were as follows:—

ARMS OF THE COMMONWEALTH DEFENCE, 1907.

Militia Staff ...	7	Army Service Corps	277	Pay Department, Rifle Ranges, Rifle Clubs, Officers, etc.	47
Light Horse ...	4,826	Army Medical Corps	671		
Field Artillery ...	1,209	Veterinary Dept. ...	14		
Garrison Artillery ...	2,032	Ordnance Dept. ...	126		
Engineers	723	Administrative and Instructional Staff	298		
Infantry	11,434				
Corps of Signallers...	247			Grand Total ...	21,911

(v.) *Classification of Land Forces.* The following table shews the classification and strength of the land forces in each State, including rifle clubs and cadets, on 30th June, 1907:—

CLASSIFICATION OF LAND FORCES, 1907.

Branch of Service.	Central Adm'st'n.	New South Wales.	Victoria.	Q'land.	South Aust.	West'n Aust.	Tas.	Total.
Permanently employed ...	21	505	402	230	60	67	44	1,329
Militia	—	4,929	4,828	2,570	1,289	907	922	15,445
Volunteers	—	2,067	1,005	179	539	651	696	5,137
Rifle Clubs	—	10,450	19,470	4,777	3,575	3,762	865	42,899
Cadets	—	5,088	6,405	2,949	1,746	1,352	1,070	18,610
Grand total ...	21	23,039	32,110	10,705	7,209	6,739	3,597	83,420

§ 2. Naval Defence.

1. **Historical Outline.**—(i.) *States' Naval Forces.* The naval forces of Australasia prior to Federation derived their character and organisation from the local conditions of the colonies in which they were raised.

(ii.) *New South Wales.* New South Wales, being the base of the Imperial Navy, was fairly well assured as regards naval protection. Mainly with the view of reinforcing the vessels of the Royal Navy on the station, a Naval Rrigade of seamen was raised, a large proportion being made up from time-expired petty officers and men of the Royal Navy. It was designed not only to serve as a reinforcement for the navy, but also to make up casualties and man any auxiliary ships, or take part in any expedition in which additional naval personnel would be of great service. To continue its naval character the *Wolverine*, an old composite or wooden corvette, late the flagship on the station, was made over to the New South Wales Government for exercise and training of the Naval Brigade, but this vessel was never fully equipped or commissioned. The officer commanding the naval forces was not an officer of the regular forces, but of the Civil Service, and the *Wolverine* was manned only on holidays and at Christmas or Easter time, and was rarely under way. Beyond the grant of the *Wolverine* and after that period—particularly after the arrival of the auxiliary squadron under the agreement—there was no recognition of this force by the Royal Naval authorities to the extent of its inclusion in any scheme of naval work or operations. In 1885 two torpedo boats were built in Sydney, and manned by the naval force, permanent officers and men being appointed for instruction and command and care of vessels and machinery. The *Wolverine* was sold for breaking up in 1889, but no other vessel was provided to take her place. The Naval Brigade, however, has steadily increased in strength, and has been added to by several companies of Naval Artillery Volunteers. The officer commanding the Naval Artillery Volunteers was in command of the torpedo boats. The strength of the New South Wales naval force stood at 614 on Federation, though, for lack of vessels in which to serve and exercise, this force had lost much of its sea character, and some sections had been merged in the land defence.

(iii.) *Victoria.* The Victorian force dates from the sixties. Local conditions dictated the character of this force. There was practically no permanent stationing of Royal Navy vessels in Victorian waters. The Heads were not fortified, and the large expanse of Port Phillip and Hobson's Bay open to foreign cruisers called for a service thoroughly naval in character for its defence. In June, 1885, the following vessels belonged to the Victorian Government, viz.:—*Nelson*, wooden frigate; *Cerberus*, ironclad; *Victoria* and *Albert*, gunboats; *Childers*, *Nepean*, and *Lonsdale*, torpedo boats; and there were also five auxiliary armed steamers. In 1892 the *Countess of Hopetoun*, first class torpedo boat, was obtained. This force was considerably reduced in 1893. The gunboats were withdrawn then, and the best vessels for sea training were disposed of. This force was maintained at an annual cost of £27,000 up to 1900. Soon after Federation it was reduced to an annual expenditure of £19,000.

(iv.) *Queensland.* The Queensland naval forces were established about 1884 on the advice of the Imperial authorities. Gunboats were built for the defence of all bays, rivers, or roadsteads against the "merchant cruiser" of the volunteer fleet order, then deemed the most probable enemy. Two gunboats, each of 360 tons, and armed each with one 8-inch and one 6-inch B.L. gun, with four light Q.F. or machine guns, the *Gayundah* and the *Paluma*, were commissioned. The *Gayundah* was maintained in commission with a full complement by the Queensland Government, the *Paluma* by the Admiralty for surveying service. There were also obtained for defence one second class torpedo boat and one picket boat, and in addition there were guns for service in river defence, mounted on steam barges belonging to the Marine Department. Queensland in addition to providing gunboats, had followed the example of New South Wales, and organised companies of a Naval Brigade at the main ports, and, as in New South Wales, there was an excess of men over facilities for training, and the force was reduced in 1893. The gunboats were put out of commission, and the whole naval force reduced. Expansion followed on improved prosperity, and in 1899 and 1900 the Queensland naval forces were raised to a total of 784. The retrenchment following upon Federation reduced the force to practically its present strength.

(v.) *South Australia.* South Australia initiated a system of naval defence in 1884 with the advice of the Imperial authorities. The recommendations of Sir W. Jervois, then Governor of South Australia, an expert in defence and military engineering, took shape in the provision of the *Protector*, a small but heavily-armed cruiser, specially designed for service in the territorial waters of South Australia. This vessel was permanently commissioned with a three-fifths complement, and exercised in every way as a ship of war of the Royal Navy. At the time of her arrival (as was also the case with the Victorian and Queensland gunboats) her armament was in advance of any carried by the vessels of the Royal Navy on the station, which were all still armed with M.L. guns of short range. The naval force of South Australia also included a reserve of from 100 in 1886 to 200 in 1900 for raising the complement of the *Protector* and all subsidiary war services. In 1893 the *Protector* was placed in commission in reserve, and the permanent crew and officers, excepting only a commander, chief engineer, and instructional staff, were retrenched.

(vi.) *Western Australia and Tasmania.* Tasmania had no naval force or vessel other than a second class torpedo boat, laid up for many years, and finally transferred to South Australia. Western Australia has had no naval force whatever.

2. **The Naval Agreement with the British Government.**—(i). *The Original Compact.* The naval defence of Australasia and its trade is entrusted primarily to ships of the Imperial Navy, maintained under an agreement entered into between the British Government and the Governments of the Commonwealth and New Zealand, and at their joint charge. This agreement was embodied in Acts passed by the several Legislatures some ten years prior to Australian federation. According to its terms, a naval force, additional to the vessels of the Australian Naval Station, which were to be maintained at their normal strength, was to act as an auxiliary squadron. It consisted of five fast cruisers and two torpedo boats of types set out, and its special function was the protection of the floating trade in Australasian waters. The agreement was made for ten years, and was then, or at the end of any subsequent year, to be terminable only upon two years' notice being given. On its termination, the vessels were to remain the property of the Imperial Government. Three cruisers and one gunboat were to be kept continuously in commission, and the remainder in reserve in Australasian ports, but ready for commission whenever occasion might arise. The vessels were to remain within the limits of the Australasian station, and were to be employed, in times of peace or war, within such limits, in the same way as the Sovereign's ships of war, or employed beyond those limits only with the consent of the Colonial Governments.[1] The first cost of the vessels was paid out of Imperial funds, but the Colonial Governments paid interest on the prime cost at 5 per cent. (up to a maximum of £35,000 per annum), and a sum not exceeding £91,000 for annual maintenance of the vessels, or a total annual contribution of £126,000. In times of emergency or actual war, the cost of commissioning and maintaining the three vessels kept in reserve during peace, was to be borne by the Imperial

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[1] The boundaries of the Australasian station were thus defined:—North—On the north from the meridian of 95° east, by the parallel of the 10th degree of south latitude to 130° east longitude; thence northward on that meridian to the parallel of 2° north latitude; and thence on that parallel to the meridian of 136° east longitude; thence north to 12° north latitude and along that parallel to 160° west longitude. West—On the west by the meridian of 95° east longitude. South—On the south by the Antarctic circle. East—On the east by the meridian of 160° of west longitude.

Nothing in the agreement was to affect the purely local naval forces which had been, or might be, established in the colonies for harbour and coast defence. Such local forces were to continue to be paid for entirely by the colony, and to be solely under its control.

Government, and, in every respect, the vessels were on the same status as the ships of war of the Sovereign, whether in commission or not. The officers and men of those in commission were subject to a triennial change. The tenth annual contribution, which was payable in advance on 1st March, 1900, apportioned on a population basis, was as follows:—New South Wales, £37,973; Victoria, £32,749; New Zealand, £21,304; Queensland, £13,585; South Australia, £10,489; Tasmania, £4,776; Western Australia, £4,816.

(ii.) *The Agreement of 1903.* The agreement was not dissolved by the union of six of the contracting colonies, but its renewal, with some alterations, was embodied in the Naval Agreement Act of 1903, the Parliament of New Zealand also assenting. The present agreement provides that the force shall be made up of one first-class armoured cruiser, two second-class cruisers, four third-class cruisers, four sloops, and a Royal Naval Reserve of 25 officers and 700 seamen and stokers. One of the ships is to be kept in reserve, three are to be partly manned for drill purposes for training the Royal Naval Reserve, and the remainder are to be kept in commission and fully manned. Australians are, as far as possible, to man the three drill ships and one other vessel, but they are to be officered by Royal Navy and R.N. Reserve officers. Eight nominations for cadetships are to be given annually in the Commonwealth and two in New Zealand. One half of the annual cost of maintenance is to be borne by the colonies—five-sixths of the half (but not exceeding £200,000) by Australia, and one-sixth (but not exceeding £40,000) by New Zealand. The agreement, like the earlier one, is for ten years.

3. **The Naval Defence of Federated Australia.**—(i.) *Proposals for an Australian Navy.* The question of the complete assumption, by federated Australia, of every branch of defence for the continent has been mooted. It has been felt that Australia should consider the question of taking full responsibility for the defence of her ports and dockyards, and the protection of coastal trade. The floating trade of the Commonwealth amounts to £170,000,000 per annum, and obviously its protection is vitally necessary. It has also been suggested that the only way in which attack can be met with advantage is on the seas surrounding our coasts. Fortress artillery would render no such adequate protection, for beyond the range of its batteries, ports could be sealed to traffic by the most insignificant enemy, while a fleet of any considerable dimensions could cause the sea trade to be annihilated.

These considerations have been controverted by the Imperial Defence Committee, whose views have been summarised as follows:—

(i.) The British fleets guarantee Australia against invasion in force.
(ii.) They guarantee against attack by any considerable squadron of armoured vessels.
(iii.) The exigencies of war may require the withdrawal of the Australian Imperial Squadron.
(iv.) Australia cannot be guaranteed against attack by unarmoured commerce raiders up to four in number, but the losses they would inflict would not be of more than secondary importance.

The two latter elements, viz., possible withdrawals, and the absence of guarantee of protection under certain conditions, have raised the question whether, even though the damage inflicted by a small fleet would have little or no effect on the ultimate issue, and be but of secondary importance, such damage would not be of serious consequence to Australia. This has led to a discussion whether Australia should possess her own navy, or at least such naval war material as would ensure the principal lines of sea communication being kept open; or if not, ensure her ports being fully defended.

(ii.) *The Naval Forces under the Federation.* Prior to 1905 a naval officer commanding administered the naval forces. On 12th January of that year the Council of Defence was established to deal with all questions of policy, and the Naval Board, then first constituted, took over the administration of the Commonwealth naval forces. Continuity of policy and administration are thereby believed to be ensured; whilst efficiency and uniformity are provided for in the scheme of inspection and report afforded to an officer who, as Director of Naval Forces, is appointed to deal with the training of the *personnel*, and the condition of the *materiel*, of naval forces and works.

The following table shews the strength of Commonwealth naval forces on 30th June, 1907:—

STRENGTH OF COMMONWEALTH NAVAL FORCES, 1907.

Branch of Service.	New South Wales.	Victoria.	Queensland.	South Australia.	Total.
Permanently Employed ...	4	121	49	22	196
Partially-paid	313	204	346	119	982
Total	317	325	395	141	1178

In addition to the above there were naval volunteer cadets numbering 100 in New South Wales, 98 in Victoria, 140 in Queensland, and 53 in South Australia—a total of 391.

(iii.) *Harbour Defences.* The vessels for harbour defence obtained by the several colonies prior to federation, and now remaining, are:—

COMMONWEALTH NAVAL FORCES, VESSELS, 1907.

Description.	Name.	State.
Iron armour-plated turret ship ...	*Cerberus*	Victoria
Steel cruiser	*Protector*	South Australia
Steel gun vessel	*Gayundah*	Queensland
" "	*Paluma*	Queensland
First class torpedo boat	*Countess of Hopetoun* ...	Victoria
" "	*Childers*	Victoria
Second class torpedo boat	*Nepean*	Victoria
" "	*Lonsdale*	Victoria
" "	*Mosquito*	Queensland
" "	... ...	South Australia
Torpedo launch	*Gordon*	Victoria
"	*Midge*	Queensland

The *Gayundah* and *Protector* are utilised for the sea-training of the naval militia.

§ 3. Expenditure on Defence.

1. **Expenditure, 1901-2 to 1907-8.**—The following table gives the expenditure of the Department of Defence from 1901-2 to 1906-7, and the estimate for 1907-8:—

EXPENDITURE ON DEFENCE, 1901-2 TO 1907-8.

Branch or Department.	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.	1907-8 Estimate
	£	£	£	£	£	£	£
Central Administration	11,717*	19,747	19,128	20,716	18,832	19,249	21,392
Naval Forces	67,277	44,736	40,988	43,370	45,753	50,201	60,524
Military Forces	586,323	517,364	458,970	490,731	500,379	535,187	614,633
Royal Reception	9,738	1	111	...	...	...	...
Rent, Repairs, and Maintenance ...	26,516	22,796	24,551	23,923	29,721	27,379	38,305
Additions and New Works	2,640	5,537	16,259	26,213	33,556	35,206	59,046
Defence Arms, Equipment, etc. ...	50,681	16,527	96,983	174,046	138,077	159,988	296,050
Audit Office	446*	1,422	929	789	765	585	934
Pensions and Retiring Allowances ...	...	934	670	712	907	974	1,139
Supervision of Public Works by State Officers	48	275	949	740	659	521	1,065
Naval Agreement	104,969	104,965	196,226†	153,358	200,025	200,000	200,000
Miscellaneous "Other"	863	50	...	...	1,671	6,325	3,924
Total	861,218	734,354	855,764	934,598	970,345	1,035,615	1,297,012

* Portion of year only. † Includes portion paid in advance on account of 1904-5.

2. **Expenditure Compared with Various Countries.**—The total expenditure on defence and the expenditure per inhabitant, according to the latest available estimates, are, in the countries indicated, as follows:—

EXPENDITURE ON DEFENCE—VARIOUS COUNTRIES.

Country.	Year.	Army.	Navy.	Total.	Per Inhabitant.	
		£	£	£	s.	d.
Great Britain ...	1907-8	27,760,000	31,419,000	59,179,000	27	0
Germany ...	1907-8	37,355,000	11,645,000	49,000,000	16	0
France	1907	31,200,000	12,480,000	43,686,000	22	3
Italy	1906-7	11,084,000	4,936,000	12,020,000	7	0
Austria-Hungary ...	1906	15,914,000	1,288,000	17,202,000	7	2
Switzerland ...	1907	1,319,000	—	1,319,000	7	6
Russia	1907	39,623,000	10,842,000	50,465,000	9	5
Spain	1907	6,365,000	1,458,000	7,823,000	8	2
Norway	1906-7	1,050,000	418,000	1,468,000	12	9
Sweden	1907	2,378,000	840,000	3,218,000	12	1
Denmark ...	1907-8	674,000	410,000	1,084,000	8	3
Holland	1906-7	2,171,000	1,474,000	3,645,000	13	0
Belgium	1907	2,562,000	—	2,562,000	7	0
United States ...	1907	21,250,000	19,792,000	41,042,000	9	9
Canada	1905-6	1,145,000	—	1,145,000	4	0
Australia ...	1907-8	1,036,488	260,524	1,297,012	6	2

§ 4. The Training of Officers.

1. **Instruction and Exchange.**—For some time officers and non-commissioned officers of the Imperial Army have not been engaged as instructors for the military forces of the Commonwealth; but in August, 1905, arrangements were made for the mutual exchange of permanent officers between the Commonwealth and England, India, and Canada. Three officers were exchanged in 1906 and three in 1907. At the same time the practice which has existed for some years of sending officers and non-commissioned officers to England for instruction has been continued, and, it is hoped, may be extended to include officers of the militia forces. This year three officers and five non-commissioned officers were sent to England for instruction.

§ 5. The Cadet System.

1. **School Cadets.**—Many years before the consummation of Australian federation the systematic military training of lads had been instituted in the schools of the colonies, and the cadet system had attained considerable development. The Commonwealth Government has made arrangements with the various Departments of Education so that boys attending school shall be afforded facilities for drill by their teachers, and regular instruction by the Cadet Instructional Staff of the military forces. The strength of the cadets has increased rapidly, and under the recently-introduced system great expansion is expected.

2. **Senior Cadets.**—Senior cadet battalions are authorised for boys leaving school, and these form a connecting link between the schoolboy soldiers and the citizen forces.

3. **Mounted Cadets.**—Mounted cadet corps have also been formed in various parts of the Commonwealth, the members supplying their own uniforms, mounts, and horse-gear, and being trained in troop and squadron drill by instructors appointed for that purpose. Their organisation is distinct from the educational establishments, but they are under similar conditions as regards drill and discipline. It is hoped that this corps will form a useful recruiting ground for the mounted branches of the service.

4. **Naval Cadets.**—Naval cadets have also been organised. Generally the instruction, given voluntarily by members of the naval forces, aims at embracing all branches of a seaman's training.

5. **Boys' Brigades.**—In addition, boys' brigades have been instituted in connection with various societies. These have not as yet come under direct Governmental control, and it is not intended that they should do so. The idea of the originators of the movement appears to be to keep the lads together in their leisure time, turning it to profitable account, and inculcating the principles of self-restraint and discipline, while at the same time preparing them for the sterner duties of citizenship.

§ 6. Commonwealth Defence Legislation.

1. **The Defence Acts of 1903 and 1904.**—(i.) *General Provisions of the Acts.* The defence of Australia at the present time is enacted and prescribed by the Defence Acts of 1903 and 1904 of the Federal Parliament. Many of the provisions are merely enabling, empowering the Governor-General to arrange for the efficient defence of the Commonwealth, and to appoint officers to responsible positions and to commissioned ranks generally. The defence force is declared to consist of the naval and military forces of the Commonwealth, divided into "permanent" and "citizen" forces, the former consisting of persons bound to continuous service for a term, the latter of persons not so bound, and divided into "militia," who are paid, and "volunteers," who are not ordinarily paid, for their services. Members of rifle clubs duly sworn, and enrolled persons who have done active service, make up the reserve forces. In time of peace, enlistment is voluntary. In time of war, the citizen forces may be called out by the Governor-General, who must state his reason for so doing, and communicate the fact to Parliament. Members of the naval forces may be called upon to serve outside the Commonwealth, but those of the military forces are not liable for such service. The forces may be used for the protection of the States from domestic violence. Command in time of war may be given to the Commander of any portion of the King's regular forces, or of the King's naval forces. For training, and in war, the naval forces may be placed on board ships of the navy of the Australian station. The Army Act (Imperial) is to apply to the Commonwealth military forces, and the Naval Discipline Act (Imperial) to the Commonwealth naval forces, while on active service, except where those Acts are inconsistent with the Commonwealth Defence Acts. Regulations, however, may prescribe that any provisions of the Imperial Acts named shall not apply. Provision is to be made out of the Consolidated Revenue Fund for families of men killed or incapacitated while on service.

Male inhabitants between 18 and 60 years of age are liable to serve in time of war, Parliament being informed of the occasion if in session, and being summmoned within ten days if not. Persons the doctrines of whose religion forbid them to bear arms or perform military service may be exempted.

Naval and military cadet corps are also established—to consist of schoolboys over 12 years of age, and youths not attending school between 14 and 19. They are not iable for active service.

The construction and maintenance of vessels, building and equipment of forts, laying of mines, institution of arms and ammunition factories, the acquisition of artillery and rifle ranges, and the performance of all acts for efficient defence and protection, are provided for. Railways and tramways are to carry troops when required. In time of war, the control of these services may be assumed by an officer duly authorised, and vehicles and boats may be impressed, and troops billeted and quartered. Heavy penalties are decreed for unlawfully giving information as to defences, or unlawfully obtaining same; and for supplying inferior provisions, material, equipment, etc. Information required under the Act is to be correctly given. Persons required to enlist are to do so, and are to take the oath or affirmation prescribed, and no person is to procure or aid desertion or to harbour deserters. Obstructing drill, personating, sketching fortifications and works or trespassing in them, or even being, with the intention of graphic representation, in their vicinity with drawing or photographing materials, etc., is forbidden. The uniform of the defence force, or colourable imitation of it, is not to be worn by persons not members of the force, and no contempt is to be brought on the uniform. The convening of courts-martial, and the appointment of officers to constitute them, is with the Governor-General, and he may confirm or remit their sentences. The composition and procedure are to be those in force in the King's regular army and navy. Corps moneys, arms, accoutrements, clothing, etc., are, for legal reasons, vested in commanding officers, who, for any good cause, may disrate or discharge any sailor or soldier of the citizen forces, the disrated or discharged person being given an opportunity to shew cause against it. The right to volunteer for service beyond the Commonwealth is conserved. No inducement is to be given to any person to enlist or engage in any naval or military force, the raising of which has not been authorised. In the arrest of deserters, the civil police are to assist.

An exhaustive body of regulations has been drawn up under the authority of the Act, and the details of service by members of the forces are set out therein. These, having been notified in the Government Gazette, have the force of law. Rates of pay for the permanent and militia forces have been fixed; the conditions of leave of absence and furlough, the mode of complaint by officers and men and of the redress of grievances, and the method of convening courts of enquiry and courts-martial, have been defined. Other matters dealt with are the preservation of the public safety during naval and military practice, payment of reasonable compensation for loss, injury, or damage, caused by military impressment or service, the quartering and billeting of soldiers in time of war, the establishment and conduct of canteens, and the fixing, within certain defined limits, of penalties for breaches of the regulations. Drill, training, and inspection of the forces, and their discipline and good government, are also ordered.

The Governor-General, under the powers conferred upon him by the Acts, has appointed an Inspector-General of the Military Forces, a Director of the Naval Forces, District Commandants, and commissioned officers generally. In the first appointment of officers, preference is accorded to persons who have served in the ranks. Promotions of officers are generally subject to passing the prescribed examinations, but distinguished service, or marked ability and gallantry in active service, may be permitted to gain promotion without examination. A Council of Defence, and Boards of Military and Naval Administration, have been constituted. A Reserve of Officers has been formed, and also an Unattached List, whence officers may be employed for duty with any corps or with the staff. The authority of the Act to establish a Naval and Military College has not yet been availed of, but a Chair of Military Science has been endowed by the University of Sydney, and an officer of the general staff has been appointed Director of Military Science. Reference is made hereinafter to the course of instruction. It is hoped that now not only soldiers will be enabled to perfect themselves in the duties of their profession, but that the influence of the teaching will pervade all classes of the community, and enable them to speak and vote more effectively, because with greater knowledge, when defence matters come up for consideration.

(ii.) *Regulations for Efficiency.* Under the regulations, certain requirements for efficiency are set out for members of the militia forces, inefficients being discharged. The principal of these requirements are :—Attendance at the annual camps of training; completion of a course of "field training" in the special duties of the arm to which the member is attached; attendance at District Commandants' inspections; and the performance during the year of an allotted amount of drill, amounting to 12 days or equivalent. Camps, inspections, musketry, and field-training parades count for efficiency, and two half-days or four nights are regarded as equivalent to a day. For volunteers, the parades required for efficiency are eight half-days and ten nights. The attendance of militia and volunteer forces at the camps in 1906-7 is shewn in the accompanying tables:—

ATTENDANCE OF MILITIA AND VOLUNTEER FORCES AT CAMPS OF CONTINUOUS TRAINING, 1906-7.

Arm.	Establishment as per Estimates.	Actual Strength at date of Camp.	Actual Number in Camp.	Percentage of Attendance in Camp to Strength.
Light Horse	5,184	4,882	4,128	85
Field Artillery	1,214	1,162	1,040	90
Garrison Artillery	1,512	1,427	1,262	88
Engineers	667	639	584	91
Infantry—Militia	6,837	6,516	5,711	88
Corps of Signallers	284	223	209	94
Army Service Corps	275	265	248	94
Army Medical Corps	621	587	520	89
Veterinary Department ...	15	10	9	90
Total Militia	16,609	15,711	13,711	87
Infantry—Volunteers	5,828	5,251	2,401	46
Total	22,437	20,962	16,112	77

The numbers classed as "efficient" for the year 1906-7 were as follow :—

EFFICIENTS (MILITIA AND VOLUNTEER FORCES) ON 30TH JUNE, 1907.

Force.	Strength on 30th June, 1907.	Efficients.	Percentage of Efficients to Strength.	Non-Efficients.
Militia	15,209	13,177	87	2,032
Volunteers	5,001	4,221	84	780
Total	20,210	17,398	86	2,812

§ 7. General Questions of Defence.

1. **Proposed Schemes.**—There have been before the public various proposals for securing the efficient defence of Australia. One aims at enforcing courses of compulsory drill on all males, on their attaining 18 years of age, the training to be conducted on lines somewhat similar to those at present in vogue for the militia and volunteers, attendance on certain nights throughout the year, with daylight parades on the afternoons of the weekly half-holiday (*e.g.*, Saturday and Wednesday), and on whole days as specially arranged. Another proposal makes the cadet system compulsory throughout the Commonwealth, and seeks to attain its end by elementary military training in school life. In connection with these and other propositions the figures of male population of the Commonwealth are of interest. The estimated number of males available for training as cadets, taken as those between the ages of 12 and 18 (at which latter age they are eligible for membership of the citizen forces) was, on 31st December, 1906, 271,000. That of males at the best period for military service, taken as those between 18 and 35, was 624,000; while between 35 and 60, there were 537,000 males. The figures in more detail are as follows :—

MALE POPULATION AT CERTAIN AGES, 31ST DECEMBER, 1906.

Age.	Estimated Male Population.	Age.	Estimated Male Population.	Age.	Estimated Male Population.
12 and under 13 ...	49,000	18 and under 19 ...	40,000	35 and under 40 ...	168,000
13 „ 14 ...	47,000	19 „ 20 ...	40,000	40 „ 45 ...	139,000
14 „ 15 ...	46,000	20 „ 21 ...	39,000	45 „ 60 ...	230,000
15 „ 16 ...	44,000	21 „ 25 ...	154,000		
16 „ 17 ...	44,000	25 „ 30 ...	179,000	Total, 35 to 60 ...	537,000
17 „ 18 ...	41,000	30 „ 35 ...	172,000		
Total, 12 to 17 ...	271,000	Total, 18 to 34 ...	624,000	Total, 12 and under 60 ...	1,432,000

2. **Ministerial Policy.**—On the 13th December, 1907, in the House of Representatives, the Honourable the Prime Minister outlined the Government's defence scheme. The leading points are summarised as follows :—

Australia is no longer outside the area of the world's conflicts, and the enormous annual war expenditure of modern nations must therefore be considered. The great wealth of Australia demands a state of preparedness for war, if only to preserve peace. The question of defence, as seen by Australia, falls naturally into three parts. The first relates to the command of the high seas, the next to the protection of our coasts, and the last to our power to hold our own territory against invaders.

The British Empire depends on the navy as its first line of defence, and, because of her long coast line, Australia is deeply concerned in this. Dependence on the Imperial navy must therefore continue; the whole defence of the sea and its control being a matter for the British Government and the British navy. The present Naval Agreement is unsatisfactory, and in lieu thereof a contribution in kind is proposed, viz., a naval force, Australian in character. It is intended to raise this force, the officers and men being engaged here under the same conditions as in the Royal Navy, or obtained after they have served in the Royal Navy, to serve on our local vessels for the usual term on this station, and then to pass into other ships of the Royal Navy to continue their training elsewhere. They would remain members of the navy in every sense, recruited and serving under its laws: They would be paid in Australia at Australian rates of pay. The ships would fly the White Ensign and the Southern Cross, and be altogether Australian in cost and in political control, as to their movements and stations; in everything else they would be part of the British Navy. The whole control, both in peace and war, would be in the Commonwealth, but if in time of danger it chose to place its flotilla under the command of the admiral on this station, as would probably be the case, it would then pass wholly under his control for the time being. The annual cost to the Commonwealth is estimated at £100,000, and the remainder of the present subsidy would be applied to submersibles or destroyers. The Australian Squadron would be an addition, although part of, the Royal Navy, for which Australia would become a recruiting ground. It is intended that docks and fitting establishments should also be maintained, coaling facilities provided, and arrangements made for a supply of coal and naval stores for His Majesty's ships. The Admiralty joins issue regarding the Government proposals, principally upon the matter of control in time of war. It is hoped that these objections will be satisfactorily overcome.

For local defence it is proposed to build vessels absolutely under Australian control, and with a sphere limited to Australian waters. This flotilla is to consist of submarines and torpedo boat (coastal) destroyers, three of the former and two of the latter being acquired annually for three years. The complete scheme would give two submarines for New South Wales, two for Victoria, two for Queensland, one perhaps at Thursday Island, and one each for South Australia, Western Australia, and Tasmania; and one torpedo boat destroyer for the chief harbour of each State. If after three years the protective force be considered insufficient, additions will be made to it according to the most modern and up-to-date principles. In addition, lights and armaments for the shore forts will be installed. Ammunition also will be purchased.

Regarding land defences, the militia is numerically weak, there being only 22,000 regularly drilled soldiers in the permanent, militia, and volunteer forces. At present only one male in every 112 is undergoing drill and military experience, and that generally for but a short period. The annual cost of this is £800,000. Numerically our force is regarded as too weak, and financially as too expensive. The Government propose a system of training, according to which every young man in the Commonwealth shall be required to serve each year for at least sixteen days in the National Guard, during his nineteenth, twentieth, and twenty-first years, instruction, continuous and practical, being imparted in local camps. Each of the present militia units will expand to three National Guard units, and the whole of the present militia will be absorbed, being required to supply officers and non-commissioned officers to train the new levies. The Guard will not ordinarily receive pay for its service, but for the longer training necessary in special corps reasonable allowance will be made. Long service undertaken voluntarily will be especially appreciated, and recognition made. After the three years' training, men will be kept in touch with what is being done, by attending occasionally, if only for a short time, at camps with the National Guard. The age of exemption from the reserves will be forty years. The uniform, accoutrements, mountings, fittings of ordnance, etc., will, whenever possible, be locally made, and it is intended to establish an ammunition factory.

A school of permanent expert instructors, whose members will travel from State to State, will train the officers, by lectures and examinations, in the latest principles of military science, and the latest lessons of military history. The system of temporary exchanges of officers with England, India, Canada, and South Africa, will continue, and officers and non-commissioned officers will be sent abroad for training.

The estimates of cost for each of the first three years, as compared with the estimates of 1907-8, are:—

DETAILS OF ESTIMATED EXPENDITURE.

Items.	1st Year.	2nd Year.	3rd Year.	Estimates, 1907-8.
	£	£	£	£
Central Administration	23,000	23,000	23,000	23,000
Head quarters of Military Districts ...	15,000	15,000	15,000	15,254
Ordnance Department	22,000	22,000	22,000	21,452
Permanent Troops	85,000	65,000	50,000	105,793
Instructional Staff	46,000	46,000	46,000	46,388
Accounts and Pay Department ...	6,000	6,000	6,000	6,198
Rifle Range Staff	3,000	3,000	3,000	2,654
Total—Permanent Services ...	200,000	180,000	165,000	220,739
NATIONAL GUARD: Training—				
Pay, including Militia retained ...	93,000	80,000	90,000	115,489
Clothing, etc.	90,000	90,000	90,000	64,197
Camps and Schools of Instruction ...	39,000	68,000	85,000	30,460
Central School	5,000	5,000	5,000	...
Ammunition annually expended ...	20,000	40,000	60,000	32,203*
Total	247,000	283,000	330,000	242,349
Arms	100,000	100,000	100,000	106,433
Accoutrements, etc.	75,000	75,000	75,000	
Stores, general contingencies, etc. ...	32,000	28,000	24,000	36,226
Field Artillery, guns, & reserve ammunition	50,000	50,000	50,000	†
Ammunition, reserve for rifles	30.000	30,000	30,000	‡
Works and buildings	29,000	29,000	29,000	59,000
Repairs, maintenance, and rents ...	26,000	21,000	16,000	31,668
Total	342,000	333,000	324,000	233,327
Grand Total, excluding Rifle Clubs and Cadets	789,000	796,000	819,000	696,415

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* £32,203 includes annual expenditure on gun and rifle ammunition and reserve rifle ammunition. † Guns are included in arms. ‡ See note *.

The total military and naval expenditure works out thus:—

GRAND TOTALS (INCLUDING CAPITAL EXPENDITURE).

Items.	Estimates, 1907-8.	1st Year.	2nd Year.	3rd Year.
	£	£	£	£
Military (including new special defence provision)	1,033,359	1,097,000	1,021,000	1,074,000
Naval Agreement	200,000	200,000	200,000	200,000
Local Naval Forces	60,524	60,524	60,524	60,524
New naval expenditure	...	357,070	414,140	471,210
Presumed unexpended balance... ...	125,950	...	...	...
Total	1,419,833	1,714,594	1,695,624	1,605,734

This table includes expenditure on cadets, rifle clubs, etc., and capital spent upon fixed defences, factories, and works. It will be seen that for this year the actual appropriation proposed is £1,300,000, although £125,000 has been deducted from the full cost, because it is not expected to be expended within the year.

The cost of the new system will not be much greater than under the present system, and it is hoped that camp life and healthy rivalry in outdoor military occupations will not only serve as a great disciplinary power, but will be a potent factor in fostering the best national spirit. It is calculated that the establishment under the new proposals will be 83,000, always in training, supplemented each year by about 30,000 men, an equal number passing to the reserve. In the eighth year over 200,000 men will be available, fully armed, equipped, and organised for the defence of the Commonwealth. The cadet movement will be largely expanded, and rifle clubs will receive an increased subsidy. The term of compulsory service in the National Guard will be reduced for those who have passed through and qualified in the cadet service, and rifle clubs will be recruited from those who have fulfilled their obligation of service in the Guard.

§ 8. Relation to the Empire.

During the New Zealand wars many colonists served with the British forces, but their service was purely as individuals. In 1885 a field battery, an infantry battalion, and an ambulance corps, numbering in all 770, with 218 horses, left New South Wales to take part in the Suakin campaign. This was the first time that duly organised colonial troops were employed outside the colonies in the Empire's wars. Lord Wolseley's despatch of 15th June, 1885, reads:—"The result was so satisfactory that I trust the noble and patriotic example set by New South Wales may, should occasion arise, be followed by other colonies."

In 1899 the outbreak of war with the Boers led to the several colonies offering contingents. This service was continued when, on 1st March, 1901, the control of the defence forces passed over to the Commonwealth. Besides the troops officially organised many Australians served as individuals in the campaign. The following table shews the strength of the military contingents sent at various times from Australia to South Africa:—

STRENGTH OF MILITARY CONTINGENTS SENT FROM AUSTRALIA TO SOUTH AFRICA.

Colony.	State Troops at State Expense.			State Troops at Imperial Expense.			Commonwealth Troops.			Grand Total.		
	Officers.	Other Ranks.	Horses.	Officers.	Other Ranks.	Horses.	Officers.	Other Ranks.	Horses.	Officers.	Other Ranks.	Horses.
New South Wales ...	160	3,217	3,135	76	1,308	1,443	78	1,271	1,294	314	5,796	5,872
Victoria	47	751	830	77	1,569	1,877	69	1,052	1,118	193	3,372	3,825
Queensland	39	694	868	73	1,346	1,603	37	699	736	149	2,739	3,207
South Australia ...	20	326	258	46	644	696	23	467	490	89	1,437	1,444
Western Australia ...	18	331	260	31	540	608	15	291	306	67	1,162	1,183
Tasmania	6	173	58	17	358	422	13	290	303	36	821	783
Australia	290	5,492	5,418	323	5,765	6,649	235	4,070	4,247	848	15,327	16,314

There were, in addition, several special service officers attached, at the request of the colonial Governments, to the British forces, whose service with the Imperial troops was with the view of aiding the development of the Commonwealth forces, particularly in regard to the routine and administration of troops on service.

The Home Government also accepted the offer of contingents from Australia on the outbreak of the Boxer rebellion in China. Naval volunteers were furnished by New South Wales and Victoria, and South Australia equipped a gunboat for the Imperial service. The strength of the New South Wales contingent was 260, that of the Victorian 200, of all ranks.

§ 9. Military Education.

Following upon the endowment by the Sydney University of a Chair of Military Science, a curriculum, to extend over a period of three years, commenced in March, 1907. The courses of lectures are open to attendance by the public upon payment of the prescribed fees, but members of the University Scouts are permitted to attend without fee, and officers of the citizen forces at half fees. The curriculum consists of individual courses of instruction, each terminating with an examination. Completion of the curriculum entitles the student to a diploma in military science, and students not completing it may receive certificates for any courses in which they have given satisfaction.

The courses for the first year are Military History and Science I. and Elementary Military Engineering. In the former subject ten lectures are given in military history and ten in strategy, and in the latter there are ten lectures with five days' practical instruction. In the second year the subjects are Military History and Science II. and Military Topography. The former comprises ten lectures in military history and ten in Imperial defence. In topography ten lectures and seven days' practical instruction make up the course. The subjects for the third year are Military History and Science III. and Military Law and Administration. Ten lectures in military history are joined with ten in tactics to make up the former, while there are twenty lectures in the latter course.

The lectures for diploma are given at the Sydney University during Lent and Trinity terms. Short continuous courses of instruction in military subjects for the benefit of officers of the permanent and citizen forces are also arranged, the lectures being delivered during Michaelmas term.

§ 10. The Defence Forces of New Zealand.

In 1840 New Zealand became a British colony by cession of the Maori chiefs. The natives have generally shewn themselves well disposed to the colonists, but in 1845-8 and 1860-70 there were native wars, in which, however, many of the clans fought for the colonial Government. Colonists joined with the Imperial troops in the campaign that began in 1845. In that year a Militia Ordinance was enacted, and 300 men were enrolled at Auckland and Wellington. The necessity of keeping trained bodies of men in case of continued resistance was acknowledged by the act of the home Government in sending soldiers, not to be kept constantly under arms and in receipt of pay, but to maintain themselves on land granted them for settlement, being in readiness for military service if occasion arose. October, 1847, saw the arrival of the first detachment of this military colony. Garrison duty was performed for a few days each year. The grant was a cottage on an acre of land to each soldier, to become, on the completion of seven years' service, his own property, with the right to purchase five additional acres at a low price. This force ultimately rose to 500 men, and the scheme was successful. The corps of New Zealand Fencibles was also constituted about the same time from discharged soldiers resident in the colony, and was approximately of the same strength as the military settlement.

The outbreak of the Waitara war in 1860 revealed a state of military unpreparedness. Martial law was proclaimed, and volunteer forces raised to fight in conjunction with the Imperial troops. After a short peace, hostilities were renewed with increased vigor and over a wider area. All available Europeans were called out for training or active service. In addition to the troops raised in New Zealand, a body of military settlers was enrolled, principally in Australia—for service in New Zealand. The terms of enrolment provided that on the termination of the war, the men were to be located on the frontier, with a grant of 50 acres each. About 1600 colonists also assisted the Imperial troops in transport and convoy duties. Before the completion of the war, the Imperial troops were removed. Owing to differences between the Home and Colonial Governments as to the conduct of the war, the latter declared its readiness to undertake its own defence. Orders were accordingly issued for the withdrawal of the Imperial troops, and most of them went home during 1866, though it was 1870 before the last regiment left the colony. The New Zealanders set about finishing the war. In 1867 it languished, and the combined forces were reduced to 3600, including 1700 military settlers. Quickened again into life, the insurrection necessitated the up-keep of an organised force. At first the only available body was the armed Constabulary corps, raised a few months before the fresh outbreak of 1868. With the increased activity of the disturbances, this body was increased to a strength of 1000 men, and designated the "Field Force." With the aid of other local forces and allied natives, the rebellion was quelled, and a lasting peace established. The Constabulary or, Field Force was gradually reduced in strength, and after various changes it was separated from the Police Force and organised as a permanent artillery unit by the Defence Act 1886. This Act repealed previous laws relating to the militia and volunteers. The Defence Amendment Act of 1900 gives the Governor power to establish an Imperial reserve, drawn from any branch of the forces, for service outside, as well as within, the colony. Under the Acts of 1886, 1900, and 1906 the defence forces of the Dominion are constituted. In 1882 the strength of the forces maintained was 7367—made up of 732 cavalry, 907 artillery, 380 engineers, and 5348 infantry. The colony furnished 150 (approximately) officers and 4850 men for the South African war.

The Royal New Zealand Artillery and Royal New Zealand Engineers, together with auxiliary units of various arms, make up the military forces of the dominion. Administration and control is in the hands of the Council of Defence. The following table gives the strength of the various corps :—

PERMANENT—	
Royal N.Z. Artillery ...	248
Royal N.Z. Engineers ...	84
Total Permanent ...	332
VOLUNTEERS—	
Field Artillery	461
Naval and Garrison Artillery ...	929
Engineers	470
Mounted Rifles	4,189
Infantry Corps	6,881
Cycle Corps	34
Signalling Corps	36
Field Hospital and Bearer Corps	53
Garrison Bands	142
Grand total trained ...	13,527

In addition there is a cadet corps with a total strength of 3094, and rifle clubs, with a membership of 3141.

The following table gives the military expenditure of New Zealand from 1900-1 to 1905-6 :—

MILITARY EXPENDITURE, NEW ZEALAND, 1900-1 to 1905-6.

Year.	1900-1.	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.
Expenditure...	£156,218	£250,478	£292,081	£221,959	£239,333	£195,028	£192,765

Enlistment for three years in a volunteer corps is decreed for all cadets in the Civil Service, on their attaining the age of 18 years.

SECTION XXIX.

MISCELLANEOUS.

§ 1. The Regulation of Immigration into Australia.

1. **Pre-Federal Restrictions.**—(i.) *Alien Races.* The several States of Australia had regarded it as desirable, long prior to Federation, to impose certain restrictions upon the admission of persons wishing to become inhabitants of those States. The influx of Chinese into the States, for example, was limited by stringent statutes, and later general Acts were passed in some of the States which had the effect of restricting the immigration of other—principally Asiatic—races.

(ii.) *Undesirable Immigrants.* Further restrictions were placed upon the admission of persons who were undesirable as inhabitants, either for medical or moral reasons, or who were likely to be an economic burden upon the community.

2. **Powers and Legislation of the Commonwealth.**—(i.) *Constitutional Powers.* By Chap. I., Pt. V., Sec. 51, xxvii. and xxviii., of the Commonwealth Constitution Act the Parliament of the Commonwealth is empowered to make laws with respect to immigration and emigration and the influx of criminals. (See page 27 herein.)

(ii.) *Legislation.* The powers specified have now been exercised, and the laws passed in pursuance thereof supersede the State laws above referred to.

The first Act passed was the Immigration Restriction Act 1901, which contained provisions restricting the immigration of the classes of persons mentioned above. The clauses restricting the immigration of persons under contract were, however, repealed, and the Contract Immigrants Act 1905 was substituted therefor. (See page 41 herein.)

The Immigration Restriction Act of 1905 amends certain parts of the Act of 1901, and the immigration of alien races and undesirable persons is now regulated by the two Acts, viz., those of 1901 and 1905. This last applies only to immigrants under contract or agreement to perform manual labour in Australia. The admission of such persons is permitted if the contract is in writing, is made by or on behalf of some person named, who must be resident in Australia, and approved by the Minister. Such approval will not be given if the contract is made with the view of affecting an industrial dispute or if the remuneration and other terms are not as advantageous to the contract immigrant as those current for workers of the same class at the place where the contract is to be performed.

There is an additional provision where the proposed immigrant is not a British subject born in the United Kingdom or descendant of such a person. In such case it has to be proved that there is a difficulty in the employers obtaining in the Commonwealth a worker of at least equal skill and ability.

In case of infraction of the law it is provided that the contract is absolutely void and the immigrant and employer are both liable to penalties, and the employer is also liable to pay the immigrant until he obtains employment, or, at the option of the immigrant, to provide expenses for his return to the country whence he came.

The above matter is referred to also herein in connection with industrial legislation.

3. **Prohibited Immigrants.**—(i.) *Provisions of the Acts.* Persons comprised in the following classes are prohibited from entering the Commonwealth, viz. :—(*a*) Any person who fails to pass the dictation test; that is to say, who fails to write out not less than fifty words of a language prescribed by regulation when dictated to him by an officer

administering the Act. (*b*) Any person likely to become a charge upon the public. (*c*) Any idiot or insane person. (*d*) Any person suffering from an infectious or contagious disease. (*e*) Any person who has been convicted of an offence, other than a mere political offence, and has been sentenced to imprisonment for one year or longer and has not served his sentence or received a pardon. (*f*) Any person undesirable for moral reasons.

Regarding (*a*) it may be stated that the Act of 1901 provided for the dictation of not less than fifty words of a European language. The Act of 1905 provided for the retention of this test until regulations be passed prescribing the languages to be employed. No such regulations have yet been made, and the provision of the Act of 1901 is therefore *de facto* still in force. It may be stated that the dictation test is not and never has been imposed upon persons of European race.

(ii.) *Exemptions.* To these restrictions there are the following exemptions, viz.:—(*a*) Any person holding an exemption certificate. (*b*) Members of the King's regular land and sea forces. (*c*) The master and crew of any public vessel of any Government. (*d*) The master and crew of any other vessel landing during the stay of the vessel in a Commonwealth port; but before the ship can obtain her outward clearance the crew must, at the demand of an officer administering the Act, be mustered, and if any member of the crew be missing, and would otherwise, in the opinion of the officer, have been a prohibited immigrant, then such person is deemed to be a prohibited immigrant, and until the contrary be proved, to have entered the Commonwealth contrary to the Act. (*e*) Any Commissioner of, or other person accredited from, the Imperial or any other Government.

(iii.) *General Provisions.* An immigrant may be required to pass the dictation test at any time within a year after he has entered the Commonwealth.

A prohibited immigrant within the meaning of (*a*) above may, at the discretion of an officer, be allowed to enter the Commonwealth, or to remain within it, upon depositing £100 and within thirty days either obtaining an exemption certificate or departing from the Commonwealth; in either event the deposit is returned.

The punishment for breach of the Act by a prohibited immigrant is imprisonment for six months and deportation in addition, if so ordered.

4. **Liability of Shipmasters and Others.**—The master, owners, agents, and charterers of a vessel from which a prohibited immigrant enters the Commonwealth are jointly and severally liable to a penalty not exceeding £100 for each entrant. The vessel may be detained as security, but may be released upon the giving of a bond with two sureties for the payment of any penalties; the vessel may be seized and sold in default of payment of penalties. The master, owners, agents, and charterers may be required to provide a return passage for the prohibited immigrant, and to pay for his maintenance during his detention prior to deportation. Masters of vessels are authorised to prevent such a person from landing and to obtain any necessary assistance.

5. **Agreements with other Countries.**—Arrangements may be made with the Government of any country regulating the admission into Australia of the subjects or citizens of such country, such subjects being not, during the subsistence of the arrangement, required to pass the dictation test.

Persons who have resided either continuously or from time to time in the Commonwealth for a period of five years in the whole, and who are about to depart from it, being persons who, if they return, would be prohibited immigrants, may obtain a certificate of exemption entitling them to return.

Certificates of exemption are granted by the Minister of External Affairs, whose department administers the Act.

6. **Statistics.**—The following tables shew the number of persons who desired but were not permitted to land, those who were allowed to land, and the nationality of the persons admitted:—

PERSONS ADMITTED OR REFUSED ADMISSION TO COMMONWEALTH UNDER PROVISION OF IMMIGRATION RESTRICTION ACT.

Year.	Persons Admitted who Passed Education Test.	Persons Admitted without Passing Education Test.	Persons Refused Admission.
1902 ...	33	45,468	653
1903 ...	13	44,117	152
1904 ...	1	47,940	117
1905 ...	3	47,940	106
1906 ...	Nil.	57,646	53
1907 ...	Nil.	71,988	62

NATIONALITY OF PERSONS ADMITTED.

Nationality.	1902.		1903.		1904.		1905.		*1906.	*1907.
	Without Test.	With Test.	Without Test.	With Test.	Without Test.	With Test.	Without Test.	With Test.	Without Test	Without Test.
EUROPEANS—										
Austrians...	647	...	809	...	990	...	683	...	691	651
Belgians	14	...	20	...	20	...	25	...	33	64
British	35,330	...	35,061	...	39,026	...	39,975	...	47,396	60.172
Danes	52	...	94	...	103	...	125	...	259	280
Dutch	45	...	30	...	26	...	43	...	91	94
French	1,011	...	1,390	...	2.076	...	1,402	...	1,866	1,686
Germans	1,162	...	1.028	...	823	...	926	...	1,339	1,909
Greeks	268	...	210	...	194	...	121	...	240	202
Italians	1,181	...	798	...	814	...	734	...	839	992
Poles	9	...	8	...	8	...	13	...	5	6
Portuguese	4	...	5	...	...	...	2	...	3	6
Rumanians	10	...	...	...	...	...	...	...	...	...
Russians	100	...	148	...	122	...	157	...	293	388
Scandinavians	221	...	382	...	320	...	281	...	776	1,173
Spaniards	32	...	53	...	27	...	35	...	38	86
Swiss	55	...	20	...	79	...	63	...	68	78
Turks	12	...	13	...	...	...	3	...	8	6
Europeans (not specified)	1,121	...	...	...	7	...	17	...	18	29
AMERICANS—										
North Americans... ...	471	...	561	...	563	...	603	...	867	889
South Americans... ...	6	...	6	...	...	...	...	...	12	15
Negroes	5	2	10	...	18	...	15	1	4	9
French Creoles	...	1	...	...	...	...	...	...	...	...
West Indians...	3	5	7	3	6	...	3	1	...	13
ASIATICS—										
Afghans	9	...	...	...	...	...	7	...	3	9
Arabs	1	...	...	...	...	...	3	...	...	8
Burmese	...	1	...	...	...	...	...	...	...	...
Chaldeans	2	...	...	...	...	...	...	...	...	...
Chinese	1,336	...	986	...	847	1	1,269	...	1,134	1,494
Cingalese...	15	...	8	2	9	...	15	...	6	13
East Indians	...	...	...	1	...	...	...	...	...	...
Eurasians	...	2	...	2	...	...	...	...	...	...
Filipinos	98	1	37	...	54	...	74	1	120	57
Hindoos	66	6	48	2	461	...	146	...	75	139
Japanese	513	8	558	1	461	...	251	...	356	521
Javanese	3	...	...	...	75	...	62	...	52	1
Kurds	3	...	...	...	...	...	...	...	...	...
Malays	321	...	526	...	469	...	289	...	436	370
Syrians	43	4	43	1	39	...	51	...	66	58
OTHER RACES—										
Maoris	...	...	...	1	...	...	1	...	2	8
Mauritians	5	1	...	...	...	...	...	...	...	...
Pacific Islanders	1,176	1	1,098	...	193	...	98	...	156	121
Papuans	93	...	145	...	552	...	415	...	368	498
St. Helena Blacks ...	...	1	...	...	...	...	...	...	...	...
Unspecified	25	...	20	...	20	...	33	...	32	30
Total	45,468	33	44,117	13	47,940	1	47,940	3	57,646	71,988

* No persons were admitted after passing the test in either of the years 1906 or 1907.

§ 2. Patents, Copyrights, Trade Marks, and Designs.

1. **Devolution of Jurisdiction upon the Commonwealth.**—Prior to the establishment of Federation, and for a few years thereafter, each Australian State possessed independent jurisdiction in respect of patents, copyrights, trade marks, and designs, and had in nearly all cases enacted its own laws governing them. Any person, therefore, who desired to protect a patent, copyright, trade mark, or design had necessarily to incur the trouble and expense of making six separate applications—one in each State. The Commonwealth Constitution Act conferred upon the Federal Parliament power to legislate respecting these matters. (See page 27 hereinbefore.)

The State Acts, though in general based upon the Imperial Statutes dealing with these subjects, were not wholly governed by them. The Commonwealth Acts, both in regard to principle and practice, have the same general foundation, but in some respects have been modified and brought into line with the totality of Australian experience.

2. **Patents.**—The first Commonwealth Patents Act was passed in 1903, and was amended in 1906. See page 41 hereinbefore.) Under these Acts, which are administered by a "Commissioner of Patents," the power of the States to grant patents was abolished, and their functions in that respect were transferred to the Commonwealth. A single Commonwealth patent now gives throughout the Commonwealth that protection which formerly could only be obtained by procuring a patent in each State. The rights of State patentees are in all cases reserved to them. A holder of a State patent in force may obtain, for a period not exceeding the unexpired time thereof, a Commonwealth patent for the invention comprised in the State patent. Any State may, however, be excepted from the patent if the Commissioner of Patents is satisfied that the invention either (*a*) is not novel, (*b*) has been made the subject of a pending application, or (*c*) has been published in such State. Comparatively small fees, totalling £8, are now sufficient to obtain for an inventor protection throughout the Commonwealth, and the only renewal fee (£5) is payable before the expiration of the seventh year of the patent.

(i.) *Applications for Patents.* Any of the following persons may make application for a patent:—(*a*) The actual inventor. (*b*) His assignee, agent, attorney, or nominee. (*c*) The actual inventor or his nominee jointly with the assignee of a part interest in the invention. (*d*) The legal representative of a deceased actual inventor or of his assignee. (*e*) Any person to whom the invention has been communicated by the actual inventor, his legal representative, or assignee (if the actual inventor, his legal representative or assignee is not resident in the Commonwealth). An application for a patent must be for one invention only, and must be made in the form prescribed, and lodged by being left at or sent by post to the Patent Office at Melbourne. It must be accompanied by either a provisional or a complete specification. The application must contain a declaration in the prescribed form setting out the facts relied on to support the application, and must be signed by the applicant and attested by a witness.

(ii.) *Term for which Granted.* The term for the duration of every patent is limited to fourteen years from the date of application. A patent ceases if the patentee fails to pay the renewal fee within the prescribed time. If in any case, however, by accident, mistake, or inadvertence a patentee fails to pay the renewal fee within the prescribed time, he may, on application to the Commissioner and on payment of the prescribed fees, obtain an extension of the time for not more than one year.

(iii.) *Opposition to Grant of Patent.*—Within three months of the advertisement of the acceptance of a complete specification any person may give notice at the Patent Office of opposition to the grant on any of the following grounds:—(*a*) That the applicant has obtained the invention from the opponent. (*b*) That the invention has not been communicated to the applicant by the actual inventor (if the actual inventor is not resident within the Commonwealth). (*c*) That the invention has already been patented in the Commonwealth. (*d*) That the complete specification describes an invention other than that described in the provisional specification, and that the opponent has applied for a patent for such other invention in the interval between the leaving of the provisional and complete specifications. (*e*) Want of novelty. (*f*) Prior publication.

The case is heard and decided by the Commissioner, from whose decision an appeal lies to the High Court or the Supreme Court.

(iv.) *Additional Patents and Amendments.* An important feature of the Patents Act of 1903 was that special provisions were made for granting patents to a patentee in respect of any improvement on his invention. Such patents are called "additional patents," and are granted for the unexpired term of the original patent, the amount of the fee for an additional patent being half that for an ordinary patent.

Amendments to specifications by way of disclaimer, correction, or explanation may be allowed on request to the Commissioner, provided that the specification, if amended as requested, does not claim an invention substantially larger than or different from the original invention. Any person may oppose an amendment on giving notice of opposition at the Patent Office.

(v.) *Revocations of Patents and Compulsory Licenses.* Revocation of a patent may be obtained by petition to the High Court or the Supreme Court of a State. A petition must be presented by either (*a*) the Attorney-General or person authorised by him, (*b*) any person alleging that he was the actual inventor or that the patent was obtained from him by fraud, or (*c*) by any person alleging that he had publicly used, made, or sold within the Commonwealth before the date of the patent anything claimed by the patentee as his invention.

A compulsory license to work a patent in the Commonwealth, or a petition for revocation of a patent, may be granted upon proof by any person interested that the reasonable requirements of the public with respect to the invention have not been satisfied. The Act also contains provisions regarding the remedies for infringement of patents.

(vi.) *International Protection of Patents.* The Patents Act of 1903 contained provisions under which the international arrangements for the protection of patents contained in the Imperial Acts could be made applicable to the Commonwealth by order of the King-in-Council. The necessary proclamation was issued by the Imperial Government as regards England and Australia on the 1st February, 1907, and as regards all other countries in the International Convention on the 5th August, 1907. British and foreign inventors are now, therefore, if they apply in Australia within twelve months of their original application, entitled to receive a patent for their inventions in priority to other applicants, and such patent has the same date as the date of the application abroad. Corresponding arrangements have also been made by the Commonwealth with New Zealand.

(vii.) *Patent Attorneys.* Any person on passing the prescribed examination, and on paying a fee of £5, may be registered by the Commissioner as a patent attorney. A solicitor may practise as a patent attorney without passing the prescribed examination and without being registered as a patent attorney.

(viii.) *Applications Filed, Provisional Specifications Accepted, and Letters Patent Granted, 1901 to 1906.* The numbers of individual inventions in respect of which applications were filed in the Commonwealth during each year from 1901 to 1906, inclusive, were as follows:—

NUMBER OF INVENTIONS FOR WHICH APPLICATIONS FILED.

	States Patents Acts.				Commonwealth Patents Acts.		
Date	1901.	1902.	1903.	1904, to 1st June.	1904, From 13th Feb.	1905.	1906.
Applications ...	1,610*	1,933*	1,772*	345*	2,243	2,685	2,748

* Approximate.

From the 13th February, 1904, to the 1st June, 1904, applications were made both under the States and the Commonwealth Acts.

The subjoined table shews the number of provisional specifications accepted and the number of patents granted in each State and in the Commonwealth from 1901 to 1906, inclusive. Under the Commonwealth Patents Act of 1903 these functions ceased to be exercised by the States, and were transferred to the Commonwealth Patent Office on the 1st June, 1904:—

PROVISIONAL SPECIFICATIONS ACCEPTED AND LETTERS PATENT GRANTED, 1901 TO 1906.

State, etc.	States Patents Acts.				Commonwealth Patents Acts.		
	1901.	1902.	1903.	To 1st June, 1904.	From 1st June, 1904.	1905.	1906.
PROVISIONAL SPECIFICATIONS ACCEPTED.							
New South Wales ...	319	476	388	74	...	...	...
Victoria	403	533	557	115	...	...	...
Queensland ...	171	238	207	32	...	...	...
South Australia ...	169	219	228	35	...	...	...
Western Australia ...	137	216	208	41	...	...	...
Tasmania	70	132	152	17	...	...	...
Commonwealth ...	1,269	1,814	1,740	314	782	1,628	1,498
LETTERS PATENT GRANTED.							
New South Wales ...	717	795	704	96	...	...	...
Victoria	699	797	680	83	...	...	...
Queensland ...	422	479	395	52	...	...	...
South Australia ...	417	442	458	82	...	...	...
Western Australia ...	356	379	380	61	...	...	...
Tasmania	272	279	259	35	...	...	...
Commonwealth ...	2,883	3,171	2,876	409	...	1,097	1,739

In the above table the figures given for each State shew the number of provisional specifications accepted or of patents granted in each State. The total for the Commonwealth for each year up to the 30th June, 1904, does not, therefore, shew the number of separate inventions, as specifications may have been accepted or patents granted for the same inventions in any number, from one to six, of the States. On the other hand the figures given under the Commonwealth Acts represent separate inventions for the whole Commonwealth.

(ix.) *Revenue of Patent Office.* The revenue of the Commonwealth Patent Office for each year since its creation to the end of the year 1906 is shewn in the subjoined table. Particulars as to the revenue of the State Patent Offices for previous years are not available:—

REVENUE OF PATENT OFFICE, 1904 TO 1906.

Particulars.	1904.	1905.	1906.
	£	£	£
Fees collected under States Patents Acts ...	3,181	5,567	6,233
,, ,, ,, Patents Acts 1903 to 1906	2,459	13,379	14,667
Receipts from publications...	...	102	134
Petty receipts	19	37	43
Total	5,659	19,085	21,077

3. **Copyright.**—Prior to the establishment of Federation the copyright legislation enacted by all the States except Tasmania was based upon and closely followed the English law of copyright, differing, however, in some cases therefrom as to the periods for which a copyright was granted. Only local publications were affected by it. A colonial law did not affect the rights of authors and artists where copyrights were acquired outside the colony. The Imperial statutes governed copyright in those colonies which had not passed a local copyright law.

(i.) *Copyright Acts.* The first Commonwealth Act was passed in 1905 (see page 41 herein). It follows English legislation even more closely than the State Acts. It deals with literary, musical, dramatic, and artistic copyrights, and applies only to Australian publications. It may be applied to foreign publications by registration of them under it.

(ii.) *Principal Feature.* The principal feature of the Australian Act is that it provides the same term of copyright and performing right for all publications under the above heads, namely, the life of the author and seven years thereafter, or forty-two years from publication, whichever be the longer. Every book published in Australia for which copyright is claimed must be printed from type set up or from plates or negatives made in Australia. With respect to lectures, it is provided that the author shall be the first owner of the lecturing right, and that he may prevent publication of a report of the lecture by giving notice at the beginning of the lecture, or by a conspicuous written notice on the entrance door or in the lecture-room stating that reporting is prohibited. The author of an article first published in a periodical to which it was contributed for valuable consideration retains the copyright in the article, but may not republish it until one year after the end of the year in which it was first published. The owner of the copyright in a book may be compelled to translate it, or to permit translation, if it be not translated within ten years of publication. The person ordering a photograph for which consideration is paid is the owner of the copyright in it.

(iii.) *Registration.* Registration is a necessary preliminary to an action for infringement, but copyright exists independently of registration. The Commissioner of Patents has been appointed "Registrar of Copyrights."

Proceedings for the rectification of the register may be taken before the Supreme Court of any State.

In the matters of copyright the Commonwealth possesses the privileges conferred upon each signatory of the Berne Convention.

4. **Trade Marks.**—The remarks made concerning the unification of the patent system of the Commonwealth apply equally to trade marks. Under the Trade Marks Act 1905, which came into force on the 2nd July, 1906, the Commissioner of Patents is appointed to act also as "Registrar of Trade Marks." There are two trade marks, viz., the "Workers' Trade Mark" and the "Commonwealth Trade Mark," which call for the special references to be found in the section herein dealing with "Industrial Legislation," see p. 880.

(i.) *Essential Particulars of Trade Marks.* A registrable trade mark must consist of essential particulars with or without additional matter. The essential particulars must be one or more of the following :—(*a*) A name or trading style of a person printed, impressed, or woven, in some particular and distinctive manner; (*b*) a written signature of the person applying for registration thereof or of some predecessor in his business; (*c*) a distinctive device, mark, brand, heading, label, or ticket; (*d*) one or more invented words; (*e*) a word or words having no reference to the character or quality of the goods, and not being a geographical name used or likely to be understood in a geographical sense. The additional matter which may be added must be either (*a*) any letters, words, or figures or (*b*) any combination of letters, words, or figures or any of them.

(ii.) *State Registrations.* State registrations cease to be in force at the expiration of fourteen years from the date of the Commonwealth Act, if the registration has not previously expired. Commonwealth registration of a State-registered mark may be effected, and the fact of its registration in a State prior to the coming into force of the Commonwealth Act, may entitle the registered proprietor in the State to Commonwealth registration, notwithstanding the existence of defects which might be ground for refusal of an original application for Commonwealth registration.

(iii.) *Duration of Registration and General Provisions.* The registration of a trade mark is for a period of fourteen years, but may be renewed from time to time. International and intercolonial arrangements for the protection of trade marks may be made in a manner similar to that provided for the protection of patents. Registration may be opposed by any person lodging a notice of opposition at the Trade Marks Office within three months after the advertisement of the application. During the year 1906 there were 3373 applications for registration of marks received at the Trade Marks Office. The total fees received amounted to £3476.

5. **Designs.**—The Designs Act of 1906 came into operation on the 1st January, 1907. Under this Act a Commonwealth Designs Office has been established and the Commissioner of Patents appointed "Registrar of Designs."

(i.) *Registration.* Any new and original design which has not been published in Australia before the lodging of an application for its registration may be registered in respect of all or any of the articles enumerated in the classification contained in the regulations, which comprise jewellery, paperhangings, carpets, floor-cloths, lace, hosiery, millinery, wearing apparel, textile fabrics, bookbinding, and articles composed wholly or chiefly of a variety of solid substances. After an application for the registration of a design has been lodged the design may be published and used without prejudice to the validity of the registration.

(ii.) *Duration of Copyright in Designs.* The registration takes effect as from the date of the lodging of the application, and, subject to the provisions of the Act, remains in force for a period of five years from that date. The owner of a registered design must, within two years after registration, use the design in Australia, and if he fails to do so the copyright ceases. If, however, such design is used in any manufacture abroad the above period is limited to six months.

(iii.) *General.* The Act also contains provisions regarding the remedies for infringement of designs, the rectification of the register, and for making arrangements for the international and intercolonial protection of copyright in designs.

§ 3. Old-age Pensions.

1. **General.**—A system for providing for the relief of the aged poor by some means which did not involve the stigma associated in so many minds with the idea of charitable aid, and which, while protecting the recipients from actual want, still left to them as large a degree of freedom as possible, has long been sought for by economists, statesmen, and social reformers. The difficulties surrounding a satisfactory solution of the question are numerous and great, and various schemes have been propounded with the object of overcoming them. Two of the principal objections which have been urged against the introduction of a general system of old-age pensions are—

(i.) its costliness.

(ii.) its tendency to induce thriftlessness.

The former is undoubtedly a serious difficulty, since in any normally constituted population the number of persons aged say sixty-five years and upwards will represent about 5 per cent. of the total population, and the provision of the sum required to pay to these a sum which would provide the pensioners with even the barest necessaries of life would be a very considerable burden upon the State Treasury. To limit this amount various suggestions have been made, of which probably the most effective have been those which provide, the one for a contribution to the pension fund by the pensioner during his earlier years, and the other by a reduction of the amount of pension payable to those in receipt of income from other sources. The former of these is the principle which has been acted upon in the scheme in operation in Germany, while the latter is that which underlies the schemes in vogue in the Commonwealth and New Zealand.

The objection which has sometimes been raised to the payment of old-age pensions on the score of the tendency to thriftlessness thereby induced is one which, in Australia, at all events, is not accorded much weight, the general feeling being that the number of cases in which the prospect of a pension of, say, 10s. per week from sixty-five onwards would lead to thriftlessness in earlier years is so small as to be practically negligible.

2. **Introduction of Old-age Pensions into Australia.**—At the present time systems of old-age pensions are in force in two of the States, viz., New South Wales and Victoria, while proposals to introduce the principle have been under the consideration of the Parliament of the Commonwealth and of those of the other States. The credit of introducing old age pensions into the Southern Hemisphere, however, belongs not to the Commonwealth, but to her sister dependency, the Dominion of New Zealand, where pensions have been payable since 1st April, 1898. The first State of the Commonwealth to make provision for the payment of old-age pensions was Victoria, whose legislation on the subject came into operation on 18th January, 1901. Later in the same year, viz., on 1st August, 1901, the pension system of New South Wales came into force.

3. **Rates of Pensions Payable.**—In Victoria, under the Acts which came into force on 18th January, 1901, the maximum rate of pension was fixed at ten shillings per week, but later in the same year under an Act which came into operation on 7th December, 1901, the rate of pension was reduced to eight shillings per week and the claims in connection with all existing pensions had to be reheard, and children of pensioners, when proved to be able to contribute towards the pension, were compelled to do so.

In New South Wales the maximum rate of pension has remained as originally fixed, viz., ten shillings per week, except in the case of husband and wife living together, when each receives seven shillings and sixpence per week. In Victoria no distinction is made between married and single rates.

4. **Pension Age.**—In both States the general age at which the right to a pension accrues is sixty-five, but in each case provision is made for the payment of a pension at an earlier age under special circumstances. Thus in New South Wales a pension is payable at ages sixty to sixty-four on satisfactory evidence of physical incapacity through sickness or injury, but is not payable at those ages on account of senile debility. In Victoria a pension is payable at any age on satisfactory evidence of permanent disablement or ill-health caused by the applicant having been engaged in mining or any unhealthy or hazardous occupation.

5. **Length of Residence.**—In New South Wales the applicant for a pension must be a resident of, and must have resided in, the State continuously for the twenty-five years immediately preceding the date on which he establishes his claim. Occasional absence, however, for periods not amounting in all to more than two years, will not invalidate a claim, and the absence of a seaman while serving on board a vessel trading to and from the State is also admissible. In Victoria the applicant must be a resident of the State, and must have so resided for at least twenty years prior to his application. During the time from which these twenty years commenced to run he must not have been absent for more than five years, and during the five years immediately preceding the date of his application he must have resided continuously in the State.

6. **Evidence of Character of Applicant for Pension.**—In both New South Wales and Victoria the recipients are required to be of good moral character, and imprisonment for extended periods will, in both States, operate as a disqualification. Thus in New South Wales imprisonment for four months during the period of twelve years, or for five years during the period of twenty-five years prior to an application, will disqualify; while in Victoria imprisonment for six months during the five years immediately preceding an application, or imprisonment at any time for three years and upwards for any offence, will prevent a claim from being recognised.

7. **Limitations in respect of Income and Property.**—With a view to restricting the pensions to persons actually needing assistance, provision is made, both in New South Wales and Victoria, for reducing the payment when the applicant already possesses income or property above a given amount. In New South Wales the pension is diminished by £1 per annum for every £1 of income above £26 in the case of a separate pensioner, and for every £1 above £19 10s. in the case of husband and wife living together, and by £1 for every £15 of property owned by the pensioner in either case. In Victoria the pension is diminished by one shilling per week for every shilling earned over two shillings per week, and by sixpence per week for every £10 of property other than furniture and personal effects to the value of £25. The maximum income that may be received, inclusive of pension, is, therefore, £52 per annum in New South Wales and £26 per annum in Victoria, and the maximum amount of property that may be held is £389 in New South Wales and £159 in Victoria. In Victoria the possession of money to the value of £10 acts as a disqualification.

8. **Number of Pensioners.**—The following table furnishes particulars of the number of old-age pensioners in each of the two States mentioned at the end of the years 1900-1 to 1906-7:—

NUMBER OF PERSONS IN RECEIPT OF OLD-AGE PENSIONS AT END OF YEAR.

Year.	New South Wales.	Victoria.	Total.
1900-1	...	16,275	16,275
1901-2	13,957	14,570	28,527
1902-3	22,182	12,417	34,599
1903-4	20,905	11,609	32,514
1904-5	20,438	11,209	31,647
1905-6	21,402	10,990	32,392
1906-7	21,465	10,832	32,297

It will be seen that during the past three years the number of pensioners has remained practically constant at about 32,000, the number in New South Wales having increased during that period by 560, while the number in Victoria decreased by 777. At the Census of 31st March, 1901, the number of persons in New South Wales aged sixty-five years and upwards represented 3.44 per cent. of the total population of that State, while in Victoria the corresponding percentage was 5.52. Assuming these percentages to hold good for 30th June, 1907, the number of persons in these two States aged sixty-five and upwards may be stated approximately as—New South Wales, 53,400; Victoria, 68,300. On this basis the number of persons in receipt of old-age pensions in New South Wales on 30th June, 1907, represented 40 per cent. of the total number in the State on that date aged sixty-five years and upwards, while in Victoria the corresponding percentage was 16. It is probable that the numbers aged sixty-five and upwards given above are somewhat underestimated, especially in the case of New South Wales, and that in consequence the percentage in receipt of pension is slightly overstated. The error involved is, however, probably not large.

9. **Amount Paid in Pensions.**—Since the inauguration of the old-age pensions schemes in the Commonwealth the total sum paid in this manner has amounted to no

less than £4,369,151, of which New South Wales has provided £2,948,905 and Victoria £1,420,246. Details for the period are as follows:—

AMOUNT PAID TO OLD-AGE PENSIONERS.

Year.	New South Wales.	Victoria.	Total.
	£	£	£
1900-1	...	129,338	129,338
1901-2	436,183	292,432	728,615
1902-3	524,967	215,972	740,939
1903-4	508,133	205,183	713,316
1904-5	496,300	200,464	696,764
1905-6	489,095	189,127	678,222
1906-7	494,227	187,730	681,957

In New South Wales the average pension paid during the year 1906-7 amounted to £23 1s. 2d., or approximately 8s. 10½d. per week, while the Victorian average for the same year was £17 6s. 7d., or about 6s. 8d. per week.

10. **Cost of Administration.**—Owing to the differences in the methods of administration the cost involved in paying old-age pensions has throughout been much higher in New South Wales than in Victoria. This has to a large extent been due to the fact that in the former State a heavy charge is levied for commission on payment of pensions by the bank through which such payments are made, while in the latter the pensions are paid through the medium of the Post-office. Particulars of the cost of administration from 1900-1 onwards are given in the following table:—

COST OF ADMINISTRATION OF OLD-AGE PENSION SCHEMES,
1900-1 TO 1906-7.

Year.	New South Wales.	Victoria.	Total.
	£	£	£
1900-1	—	711	711
1901-2	17,258	2,799	20,057
1902-3	20,567	2,185	22,752
1903-4	20,341	1,670	22,011
1904-5	22,040	1,682	23,722
1905-6	21,248	1,811	23,059
1906-7	20,949	1,746	22,695

For the year 1906-7 the cost of administration in New South Wales represented no less than 4.24 per cent. of the amount actually paid in pensions, while in Victoria the cost of administration amounted to only 0.93 per cent. of the pension payments. Compared with the number of pensioners the cost of administration in New South Wales for 1906-7 represented nineteen shillings and sixpence per head, and in Victoria three shillings and threepence per head. The total cost of administration since old-age pensions were introduced has been £135,007, of which New South Wales has paid £122,403 and Victoria £12,604. It may be mentioned that in New Zealand, for the year 1906-7, the cost of administration represented 1.67 per cent. of the amount actually paid in pensions, or seven shillings and elevenpence per pensioner.

11. **Commonwealth Royal Commission on Old-age Pensions.**—On the 27th February, 1905, a Royal Commission, of which the Honourable Austin Chapman, M.P., was chairman, was appointed "to inquire within Australia into (*a*) the working of the Old-age Pension Acts of New South Wales and Victoria; (*b*) the probable cost and best means to be adopted for establishing old-age pensions for the Commonwealth; and (*c*) to continue the inquiry commenced by a Select Committee of the House of Representatives in relation to the said matters." Prior to the appointment of this Commission the Select Committee referred to had held six meetings, and had examined three witnesses,

The Royal Commission visited each of the States of the Commonwealth, and examined sixty-four witnesses, their inquiries extending over thirty-six sittings, of which eleven were held in Melbourne, twelve in Sydney, five in Perth, three in Brisbane, two in Adelaide, two in Hobart, and one in Launceston. As the result of their inquiries the Commission made the following recommendations in their report, dated 16th February, 1906, and addressed to His Excellency the Governor-General:—

(i.) "That old-age pensions should be provided throughout the Commonwealth, and be paid out of the consolidated revenue.

(ii.) "That a bill for this purpose should be submitted by your Excellency's advisers for the early consideration of Parliament.

(iii.) "That the rate of pension should be fixed at a maximum of ten shillings per week, subject to any deductions hereinafter recommended.

(iv.) "That the qualifying age should be sixty-five years, but that it may be reduced to sixty where an applicant is permanently incapacitated for work.

(v.) "That a residential qualification should be imposed as follows:—

"In all cases a continuous residence in the Commonwealth of twenty-five years, provided—

(*a*) "that where the applicant is a native-born resident with an aggregate residence of at least fifty years in the Commonwealth such continuity shall not be deemed to be interrupted by absences totalling not more than six years; nor

(*b*) "that in all other cases such continuity shall not be deemed to be interrupted by absences totalling not more than three years.

(vi.) "That where otherwise qualified the following persons shall be eligible for an old-age pension:—

(*a*) "All natural-born British subjects of a white race.

(*b*) "All persons resident in the Commonwealth (not being Aboriginal natives of Australia, Asia, Africa, or the islands of the Pacific) who have been naturalised for a period of three years next preceding the date on which they make their pension claims.

(vii.) "That every pension granted should be held subject to review, amendment, suspension, and cancellation, at any time by the authorities clothed with power in that behalf.

(viii.) "That payment to pensioners should be made fortnightly.

(ix.) "That payments should be made through the Post-office.

(x.) "That the general administration should be by a Commissioner, responsible to a Minister of State. That a Deputy Commissioner be appointed for each State; the States to be divided into districts, and each district to have a registrar, to whom all applications should be made, and by whom pension claims should be prepared and placed before a police, stipendiary, or special magistrate for investigation. The magistrate should make recommendations to the Commissioner or a Deputy Commissioner with reference to the granting or rejection of applications. That, in the event of the rejection of any claim, an appeal should be allowed to the Minister. The magistrate should also have power at any time during the currency of a pension to recommend cancellation, amendment, or suspension. In all such cases there should be a right of appeal to the Minister. The power of granting, cancellation, or suspension should be given to the Commissioner or Deputy Commissioners.

(xi.) "That applications be heard in open court, provided that the magistrate have power, if he deem it advisable, to hear any case *in camera;* all evidence to be taken on oath.

(xii.) "That provision should be made to compel a husband, wife, or children, as the case may be, if in a position to do so, to contribute the amount of the pension.

(xiii.) "That if an applicant or a pensioner be proved to be of disreputable or intemperate habits, the magistrate should have power to recommend—

(*a*) "in the case of an applicant, that the application be refused, or granted conditionally on payment being made through an agent;

(*b*) "in the case of a pensioner, the forfeiture of one or more instalments, or that payment be made through an agent, or cancellation of the pension.

(xiv.) "That the yearly income of a pensioner from all sources, inclusive of pension, should not exceed fifty-two pounds per annum.

(xv.) "That the deduction on account of income from other sources be one pound for every pound over twenty-six pounds per annum.

(xvi.) "That the net capital value of accumulated property held by an applicant should not exceed £310.

(xvii.) "That the deduction on account of property should be one pound from pension, on every ten pounds of net capital value over fifty pounds, excepting where the property of an applicant consists of a home in which he permanently resides and which produces no income; then an exemption of £100 should be allowed.

(xviii.) "That the property of a pensioner at death should vest in the Registrar of Probates or the Curator of Intestate Estates, as the case may be, as officer acting for the Commonwealth Government, and the indebtedness on account of pension money paid should be liquidated therefrom in priority to all other claims.

"Pension money received from time to time should be a continuing charge on any land acquired by the pensioner before or after the receipt of the pension, notice of such charge to be recorded by the Registrar of Lands Titles as from the date of grant of pension.

(xix.) "That a penalty should be imposed for supplying an old-age pensioner with intoxicating drink."

12. **Estimated Cost of a Commonwealth Old-age Pension Scheme.**—At the Census of 31st March, 1901, the population aged sixty-five and upwards represented 4 per cent. of the total population of the Commonwealth. If the same proportion be assumed to hold at 31st December, 1907, the number of persons aged sixty-five and upwards at that date would be approximately 168,000. If it be further assumed that in the event of an old-age pension scheme being established for the Commonwealth the proportion of pensioners would correspond to that experienced in the case of New South Wales, the number of pensioners on 31st December, 1907, would have been approximately 67,200, while the amount payable annually to such pensioners in respect of a maximum pension of ten shillings per week, would, on the basis of the New South Wales results for 1906-7, have been £1,550,000. Assuming the cost of administration to amount to 2 per cent. of the pension payments, the total cost of such a scheme would be approximately £1,580,000. As an indication of the gigantic nature of the responsibility which an old-age pension scheme involves, it may be mentioned that in connection with the evidence tendered to the Commonwealth Old-age Pension Commission a computation was made of the total liability in respect of accrued pensions which the Commonwealth would have incurred if, at 31st March, 1901, the date of the Census, 39 per cent. of the persons aged sixty-five years and upwards were entitled to pensions of 10s. per week. The total liability computed on these assumptions was £10,415,820.[1]

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[1] See Minutes of Evidence of Royal Commission on Old-age Pensions, p. 80.

§ 3. Valuation of Commonwealth Production.

The want of uniformity in methods of compilation and presentation of Australian statistics renders it an extremely difficult task to make anything like a satisfactory valuation of the various elements of production. At present there is so little accurate statistical knowledge regarding such industries as forestry, fisheries, poultry, and bee-farming, that any valuation of the production therefrom can only be regarded as the roughest approximation. As a matter of fact complete information as to value of production in all States is available in regard to the mining industry alone, and even in this case adjustments have to be made before the returns are strictly comparable. Careful estimates have been made in some of the States in connection with the value of production from the agricultural and pastoral industries, and where such returns are not available estimates have been made which, it is believed, in the main give fairly accurate results. In the case of manufactories, however, only three of the States collect statistics of value of production, and it is obvious that approximations for States which do not collect the information, based on the results from those which furnish returns, are of very inferior value. A glance at the chapter dealing with the manufactories will shew the poverty of the statistics hitherto collected on this important field. While the difficulties in the way of obtaining adequate valuations for all classes of production are serious enough at the present time they are still more pronounced in seeking to obtain information as to values for earlier years, when the returns were far more incomplete. It must be clearly understood, therefore, that the values given in the succeeding tables are, in general, approximations only. With the adoption of the forms and methods of tabulation agreed upon at the Statisticians' Conference of 1906 it is hoped, however, that at no distant date fairly complete valuations will be available for all industries. In the meantime the figures quoted must be taken with all their limitations. The table hereunder shews the approximate value of the production from all industries during the year 1906:—

ESTIMATED VALUE OF PRODUCTION FROM INDUSTRIES, 1906.

State.	Agriculture.	Pastoral.	Dairy, Poultry, & Bee-farming.	Forestry and Fisheries.	Mining.	Manufacturing.	Total.
	£1000.	£1000.	£1000.	£1000.	£1000.	£1000.	£1000.
N.S. Wales ...	7,518	19,743	5,118	1,686	7,932	12,083	54,080
Victoria ...	7,577	8,923	5,452	899	3,391	10,307	36,549
Queensland ...	3,070	9,877	1,587	668	4,199	3,098	22,499
South Aust. ...	4,102	3,623	923	150	957	2,768	12,523
West. Australia	1,534	2,074	262	1,218	7,931	1,758	14,777
Tasmania ...	1,548	1,149	269	258	2,233	1,158	6,615
C'wealth ...	25,349	45,389	13,611	4,879	26,643	31,172	147,043

A glance at the figures in the above table will give some idea of the distribution of the great producing industries throughout the Commonwealth. Thus New South Wales and Victoria, as might naturally be expected, take the leading position in Agriculture, with Queensland and South Australia following. In Pastoral Production, New South Wales is easily first, with Queensland second. In Dairy-farming the positions are the same as in Agriculture, while in Forestry and Fisheries, and in Mining, New South Wales and Western Australia occupy first and second place respectively. Manufactories on an extensive scale are at present practically confined to New South Wales and Victoria.

The total production from all industries was thus £147,043,000, equal to an average of £35 19s. 10d. per inhabitant.

In the next table will be found the value of production at decennial intervals since 1871, and for the year 1906. The figures for the Census years have been taken from "Australia and New Zealand," and, in view of what has been said in a previous paragraph, must be regarded as very rough estimates only:—

ESTIMATED VALUE OF PRODUCTION, 1871 TO 1906.

State.	1871.	1881.	1891.	1901.	1906.	Development* since 1871.
	£1000.	£1000.	£1000.	£1000.	£1000.	
New South Wales ...	15,379	25,180	36,740	38,954	54,080	3.5
Victoria	19,260	22,750	30,320	30,807	36,549	1.9
Queensland	3,995	10,200	14,274	16,933	22,499	5.6
South Australia ...	5,228	8,457	9,026	10,314	12,523	2.4
Western Australia ...	707	948	1,806	12,544	14,777	2.1
Tasmania	2,131	3,586	3,921	5,033	6,615	3.1
Commonwealth ...	46,700	71,116	96,087	114,585	147,043	3.1
	£ s. d.	£ s. d.	£ s. d.	£ s d.	£ s. d.	
Average per head ...	27 17 2	31 1 3	29 19 9	30 2 6	35 19 10	1.3

* Absolute ratio of present production compared with that of 1871.

In connection with the high values, absolute and relative, shewn by the year 1906, the fact must not be overlooked that this year was a particularly favourable one over the greater part of Australia, while wool, metals, and other articles of domestic production realised very high prices in British and foreign markets.

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